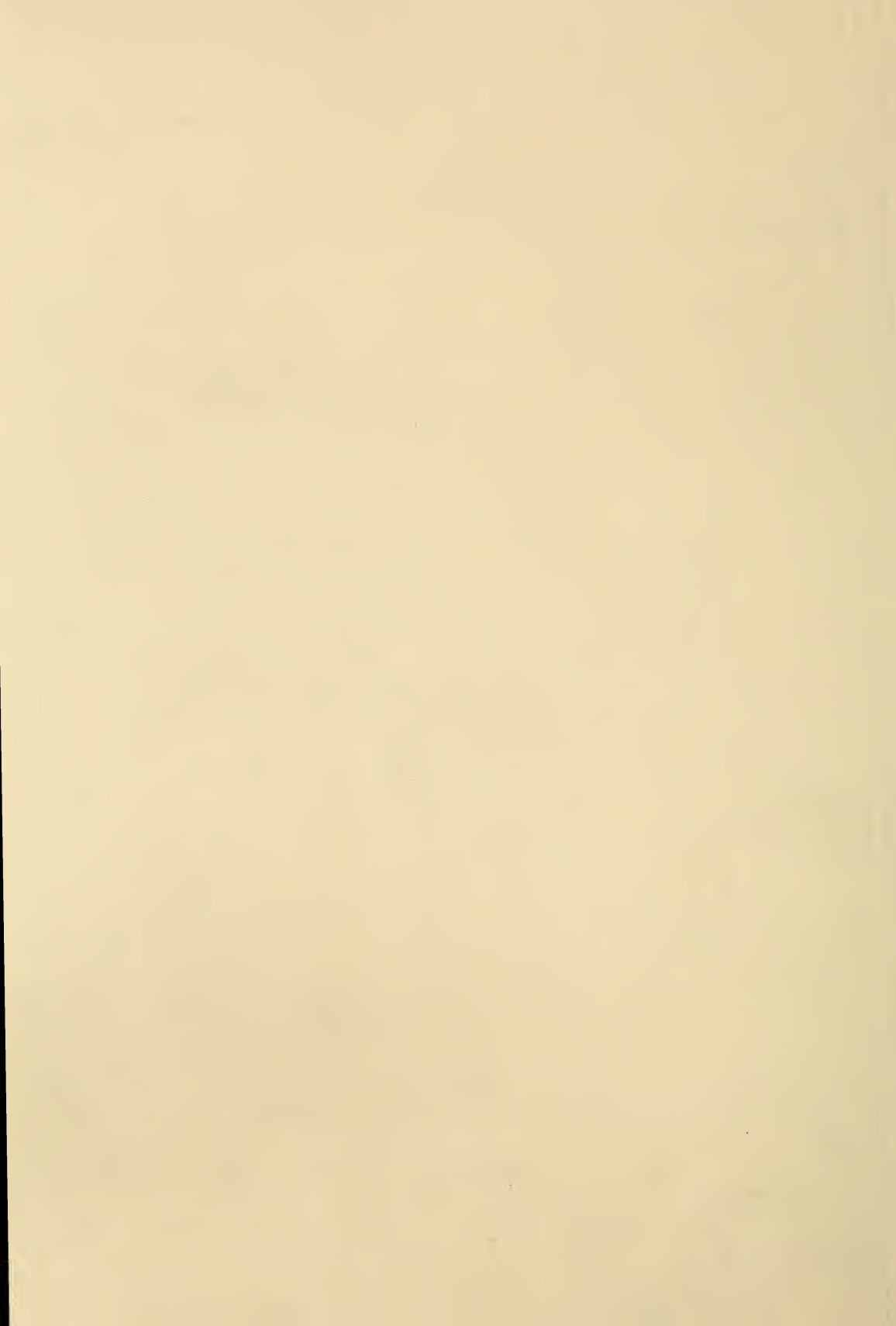
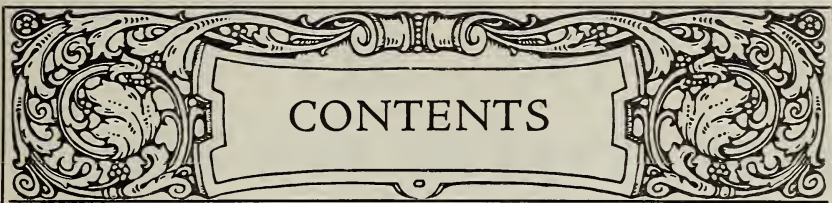


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THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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Editor	Editor Home Dept.	Assistant Editor	Managing Editor

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PEARL & WALNUT STS.

CINCINNATI, OHIO

GLEANINGS IN BEE CULTURE

NOVEMBER, 1918

EDITORIAL

TO ATTEND CONVENTIONS costs the average beekeeper anywhere from \$10 to



Wasting Valuable Time at Bee Conventions.

\$25, to cover railroad fare and hotel bills. Most beekeepers will not attend a second time unless they feel that

they can get back enough valuable information to cover the cost of the trip. Therefore it comes about that the hours and minutes of convention time are exceedingly valuable. If the average amount paid to attend a convention is \$10.00 and there are fifty present, the cost per hour will run something like \$60.00, estimating that there are two sessions of four hours each. When, therefore, a few beekeepers will get to haggling on parliamentary technicalities, or when a lot of valuable time is taken up in the election of officers and appointment of committees in which the whole convention unnecessarily takes a hand, many beekeepers become soured and vow they will never go to a convention again.

Every one who attends these meets is entitled to hear discussions bearing on vital topics. Many beekeepers go to learn how to solve a certain problem. Others go because they wish to know the price at which they should sell their honey. When, therefore, some of them see that practically all the time of a session is taken up in the election of its officers and useless parliamentary wrangling, they are disgusted.

But the question may be asked: "How can the matter be expedited?" In the first place, we would not have any constitution to wrangle about. Let the will of the majority at that particular meeting prevail, and that right speedily. In the second place, have a nominating committee appointed by the chair to select officers. Such a committee can pick out the right men better than a whole convention going thru the long and tedious process of a ballot. If the nominating committee is favorable to certain interests, then the convention can accept the report of the committee or else reject it and proceed to elect officers in the usual way. As a general rule the best interests of the convention will be subserved by accepting the report of the nominating committee.

All other routine business should be ar-

ranged by committees appointed by the chair. We would eliminate the address of welcome by the mayor and other town functionaries, and the response. We would confine the program down to the discussion of vital bee and honey questions, so that when the beekeepers go home they can feel that they have obtained something for their money.

There is another part of this convention-going that is valuable, and that is the social time between sessions; for it is then that one beekeeper can approach another and dig out the information he is after. These between-sessions are often more valuable than the regular set-program discussions.

In every program we would have a question-box. There should be a committee to revise and sort out the questions, because there are some questions that should not absorb the time of the whole convention—questions, for example, that can be found answered in any text-book on bees.



THE DAY of the honey adulterator has passed. The modern chemist and the United States food



Honey Adulterators Caught and Punished.

authorities have made it impossible for him to ply his evil trade. As an

evidence of the truth of this statement, we quote the following news item printed in one of the leading New York dailies of Oct. 6.

"The Federal Food Board announced yesterday that the license of the Standard Refining Company, No. 217 West Street, has been suspended for four weeks because of the sale of adulterated honey. The company has contributed \$2,919, representing the excess in price, to the Red Cross. The Board says: 'Since about May 1, 1918, the company has sold large quantities of a mixture of honey and corn syrup without informing purchasers that it was adulterated honey. The amount of corn syrup added to the honey ranged from 15 to 26 per cent, whereas the labels on the containers and the invoices described the contents as 'pure honey' or 'honey.'"

This adulterating firm will do no business

from Oct. 12 to Nov. 12, has been made to pay \$2,919 to the Red Cross, and, most severe punishment of all, is branded before the whole country as dishonest.

We can add somewhat to the history of this case, as it was a sale of this Standard Refining Company to the A. I. Root Company that brought about the detection of its rascality. During the summer just past, this firm of adulterators sold to the A. I. Root Company for delivery at Philadelphia approximately \$2,700 worth of amber Cuban honey and bought for pure honey. The A. I. Root Company has a way of analyzing very carefully any honey about which it has any doubt whatever, and so it was that the honey sold to the Root company by the Standard Refining Company was analyzed by Mr. Selser, an expert chemist and manager for the A. I. Root Company at Philadelphia. It was found to be heavily adulterated, and the adulterators did not make denial of its impurity when charged with it and made full restitution to the Root company, who threw the "stuff" back onto the Standard Refining Co.'s hands. A complaint of the adulteration of honey in New York was made by the Editor of Gleanings to the authorities at Washington, and the Bureau of Chemistry of the U. S. Dept. of Agriculture was put on the trail. Where the trail ended is told above.



MAY WE ASK that our readers, who wish to contribute to Gleanings' columns, remember that copy

**Don't Delay—
Write Early.**

must reach us previously to the 5th of the month preceding that month in which it is desired that an article should appear. That is, had one of our readers wished an article to appear in this November Gleanings, he should have mailed it so as to have reached us at the latest by Oct. 5. In order to reach our readers on time, the type for Gleanings has to be practically all set as early as the 10th or 12th of the month preceding the month of issue. In other words, if you read this November Gleanings and see something in it to which you wish to make reply or on which you wish to comment, don't delay writing it, but write it and send it to us at once—before Nov. 5 at the latest. It can then appear in the next (December) Gleanings. What we are writing is prompted by the fact that on this date (Oct. 16) when the very last type for the last form of Gleanings is being set, a half dozen communications on topics timely for November (and not later) have reached us, but cannot be printed. We very much regret this, but it cannot be helped when writers for Gleanings delay writing as they do. Make this a rule: When you see something in Gleanings about which you wish to write for the next issue of Gleanings, write it at once—don't delay.

IN THIS EDITORIAL I purpose to throw aside the editorial "we," either because it is too indefinite, or

**Open Letter
from the
Editor.**

not specific enough to cover certain personal experiences that I wish

to lay before our readers. In short, I want to take those same readers into my confidence, to tell them a little of the present inside workings of Gleanings.

Gleanings in Bee Culture has been growing, as have also its publishers, The A. I. Root Co. As an executive officer of the latter, my duties have materially increased—so much so that my doctors have said I would have to be relieved or resign my place entirely. Besides the management of the aparies, the selection of copy, its preparation for publication, the writing of the A B C and X Y Z of Bee Culture (a volume of 800 double-column pages), the answering of letters, attending conventions and field meets, and receiving traveling men, I have had the duties of an executive officer of The A. I. Root Co., which has taken no small part of my time. Fortunately, a younger brother, H. H. Root, some years ago came on the scene to help me out. But there came a time recently when he was more needed elsewhere. In looking about for a general manager for The A. I. Root Co., it was decided to give him the job. This action must have left me with very little editorial assistance, had I not already secured the services of an experienced newspaper man and publisher as managing editor, and likewise the services of an experienced and expert beekeeper, Miss Iona Fowls, as assistant editor, who is the daughter of Chalon Fowls of Oberlin, a widely known beekeeper. Much of the improvement that has been made in Gleanings within the last two years should, in all fairness, be credited in no small degree to Miss Fowls and to the managing editor, who is himself an enthusiastic beekeeper.

When it became certain that I should have to have an assistant editor I decided that, first of all, that person should be an experienced beekeeper—one who had been managing bees successfully for years on a commercial scale. In this point, Miss Fowls was more than able to qualify as she has worked with bees from childhood. In addition to her ability as a beekeeper she is a graduate of Oberlin College, taking the degree of A. B.; taught school for a number of years; and at the time I engaged her as assistant she had just finished her post-graduate course, taking the degree of A. M., thus qualifying herself for a college position. While I do not consider a college education to be all that the editor of a beekeepers' journal needs, yet it certainly is a very great advantage; and no one will deny that a trained mind is invaluable in that it will weigh evidence and come to a fairly correct conclusion.

Not only is Miss Fowls' knowledge of

bees deep and thoro, but her enthusiasm for everything connected with the bee business is contagious. She likes her job. She has been on the Gleanings editorial staff for over a year now, and has made more than good from the first. So the time has now arrived when I feel that I should formally introduce her to our readers.

As an evidence of the good work she is doing, allow me to give a little incident. My father, A. I. Root, came into my office one day saying: "I want to congratulate you on the work you are doing in the department of questions and answers. I have gone over your answers very carefully; and I want to say that it is some of the best work you ever did in your life." Turning, I said: "You are not in the habit of throwing bouquets around promiscuously; and in this case I could only wish that I could rightfully claim the honor; but candor compels me to say that it is Miss Fowls, my assistant, who has been preparing these answers, and it is very seldom or never that I have any suggestions or corrections to make." "Well, then," said father, "why don't you, in all fairness, put her name at the head of the department rather than your own?" "For the simple reason that she objects, saying that our readers do not know her, and that they do know me."

I now feel that it is only fair that Miss Fowls' name be put at the head of the department, as you will see it in this issue, and that it be known that she has an important part in all of the editorial work of Gleanings.

In addition to the editorial staff at Medina, Miss Fowls draws on and supplements the experience of her father; and in this connection I take pleasure in saying that Chalon Fowls and his two daughters make up a trio of beekeepers that I consider equal to any in the United States. I have been all over the country; and about the poorest beekeeping locality that I know of is in and around Oberlin, O., their home. The land is flat, wet much of the time, and so dry at other times that it leaves deep cracks. The soil is poor and deficient in lime, so necessary for the growth of clover, their sole dependence for honey. In spite of all this handicap of locality, Mr. Fowls and his two daughters have made beekeeping their sole business, and have succeeded in it unvaryingly, year after year, with the most satisfactory financial results.

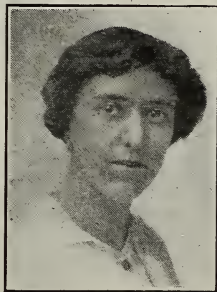
When I selected Miss Fowls as my assistant I felt that a beekeeper who could make good in a poor locality, and put herself thru college, would be vastly more helpful to the average run of beekeepers in average localities than one who has lived in a place where the soil, conditions, and climate are ideal for the production of honey. The proof of

this statement will be found in this journal's department of Gleaned by Asking, which is built mainly on the knowledge of the Fowls family. Miss Fowls is adding to this knowledge constantly, for I have put her in personal charge of our beeyards, now aggregating about 800 colonies of bees in nine different yards.

Besides the help of Miss Fowls, I expect more than ever to call on the ripe experience of Mel Pritchard on all questions relating to queens. There is no better authority on queens and queen-rearing and the natural history of bees.

I will be pardoned for the personal reminiscence relating that many years ago Chalon Fowls used to come to my room when I was a student in Oberlin College, and talk bees. These unconventional conventions with Mr. Fowls have always been a source of pleasure and profit to me during the years that have followed. Time and time again I have gone to him to have him help me solve some knotty problem in bee culture, and as often he has been ready with an answer. Enthusiasm—he is full of it. Now, having gotten Miss Iona on our editorial staff I am in position to draw, even more than in the past, on the ripe experiences of the very man who helped to inspire me 36 years ago, a year or two before I became editor of Gleanings.

Now a word about myself—am I going to resign? Not at all. I expect to stay right on the job as editor of Gleanings. I expect to make other people do the work that I have not the time to do. I shall continue to be traveling editor and editor-in-chief as heretofore, to write editorials as before, and to travel among beekeepers, armed with camera and notebook. It is my purpose now to keep on with the series of articles I have begun, telling what the big beekeepers and the little beekeepers have been doing, and just how they do it. The camera will be kept busy clicking and the best of the "clicks" will be reproduced in Gleanings. A knowledge of what such a beekeeper as R. F. Holtermann in Canada or L. S. Griggs in Michigan is doing (two of the most successful beekeepers in the world) is invaluable. It is my purpose to call on such men all over the United States. My plans are now made to make a special trip to the Pacific Coast in the very near future. The columns of Gleanings for the year to come will have illustrated articles telling just how the other fellow does his work. I shall write mainly of those beekeepers who succeed; and it will be my job to discover why and how they succeed, and then tell my readers about it. My aim is to make Gleanings increasingly useful to its readers, and to keep it abreast of the best beekeeping the country over.



IONA FOWLS.

E. R. Root.

IN our October issue I discussed the fundamentals for successful outdoor wintering; but I did not go into minute details any further than would be indicated by the half-tone illustrations on page 594. I have since had some pen drawings made that show every detail of construction of the different methods of packing. These, together with the legends beneath, explain not only the method but the reason.

It should be understood that we are showing at this time only the methods of packing colonies for single-walled hives. The construction of the various double-walled hives that are used both summer and winter is so well known that I need not go into that phase of outdoor wintering. Probably 99 per cent of all colonies of bees are in single-walled hives, either on account of their

BEES IN SINGLE-WALLED HIVES

How to Pack for Outdoor Wintering. New Ideas as to the Best Shape and Construction of Entrances

By E. R. Root

initial cost or because of their greater mobility and compactness for outyard work. Commercial beekeeping has resolved itself into a series of apiaries sur-

rounding the residence of a beekeeper who may also have an apiary in his own doorway. When a series of outyards are used, aggregating from 300 to 500 or even 1,000 colonies, the first cost of the hive itself is an important factor; hence I have felt that it is important at this time to show several ways of packing outdoors in single-walled hives.

As the legends beneath the engravings give all necessary details it only remains for me to make some general comments.

The plan recommended by the Government experts as shown in Fig. 1 is good except in the matter of expense. If the colonies are strong enough, and have sufficient

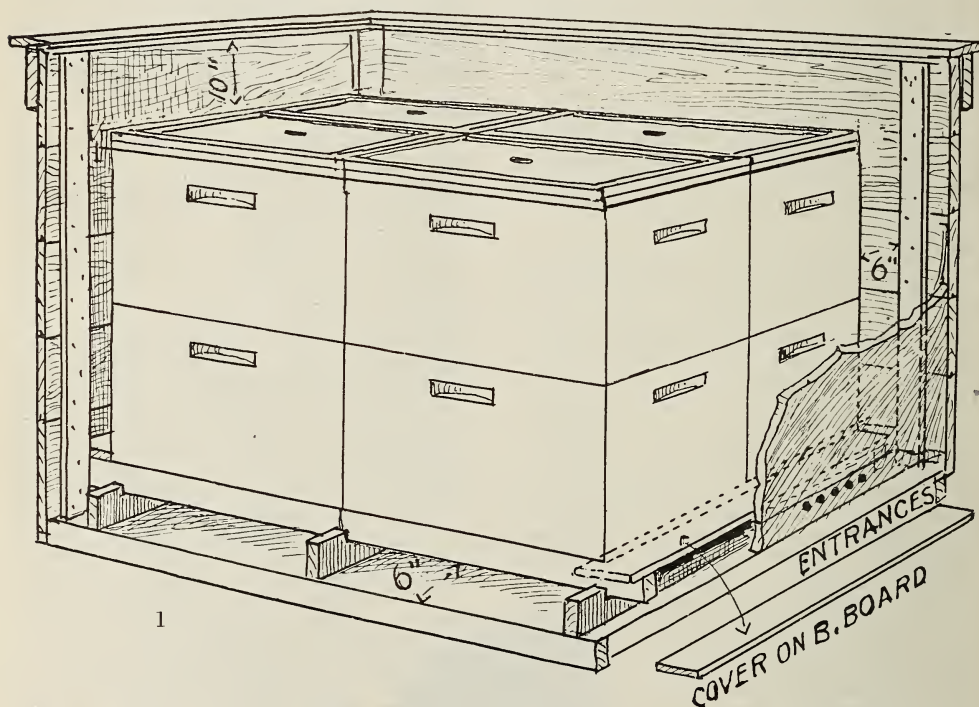
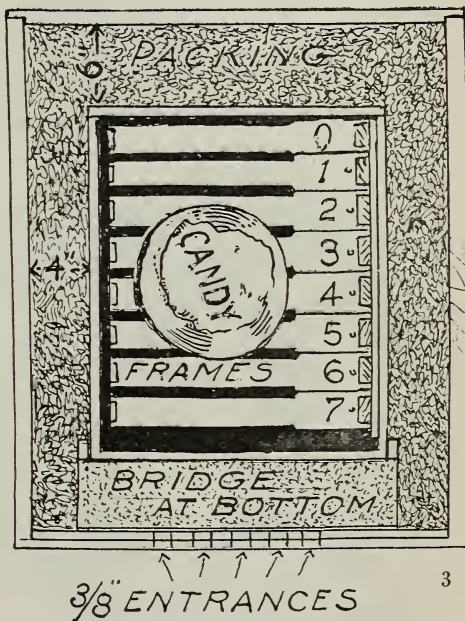
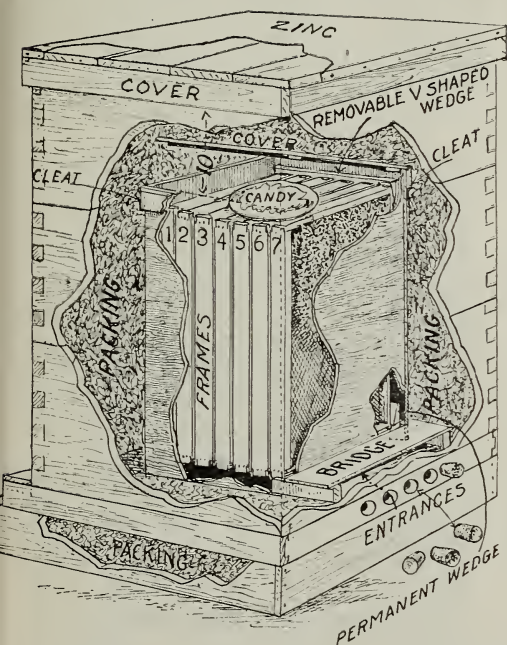


Fig. 1.—This is the plan recommended by Dr. E. F. Phillips and by a good many other beekeepers for wintering bees outdoors in single-walled hives. It contemplates a winter case made up of panels which are held together by means of screws or nails at the corners. This case should provide six inches of packing around the sides and ends, at least four inches under the bottoms of the hives, and at least ten inches on top. Dr. Phillips particularly recommends wintering in two-story hives. First, a double brood-nest makes a relatively deep wintering space. Second, it provides ample room for breeding in the spring. Third, it provides ample stores. Fourth, no attention is needed during spring. Spring management is practically eliminated. Attention is drawn to the five-hole entrance. All the holes except one in the center, according to Dr. Phillips, should be closed during cold weather. As spring approaches, one or more holes are opened up. The only objection to the plan here shown is the expense of the winter case, this amounting to about \$3.00 per case, and the requirement of at least 45 pounds of stores per colony, which, at 20 cents a pound, means \$9.00 worth of honey.

stores, either natural or artificial, the two-story plan of wintering in the big cases is possibly as nearly perfect as anything that has yet been tried; but, unfortunately, many colonies are either hardly up to one-story strength or short of stores, on account of the sugar shortage. For all such the Demuth plan offers its advantages. The initial cost of the inner case is low and the protection good. We had excellent results with it last winter, severe as it was. I am convinced that a winter brood-nest should be relatively deep to get the best results. The Langstroth

the same strength in a Langstroth hive, with the same protection, will winter very poorly. Bees seem to like a tall shaft; for then the cluster can move up and down; and experience last winter with the Demuth case showed that bees in the coldest part of winter would cluster in the top of the inner case. It was so warm up there, and so far from the entrance, that during most of the winter the cluster expanded over the top.

The two-story scheme of wintering as shown in Fig. 1 likewise makes a relatively deep brood-nest, and yet leaves the frames



Figs. 2 and 3.—These two figures represent the Demuth mode of wintering a single-story colony of bees on Langstroth frames. It consists of an inner case large enough to take seven and eight frames—preferably eight—placed on end instead of the way they hang in summer. The outer case consists of two Langstroth hive-bodies and a super, or three hive-bodies. The hive-stand may be packed full of dry leaves and set on a platform a few inches from the ground. The inner case, containing preferably eight frames, is then set down in the center of the two hive-bodies. Dry leaves packed solid, or planer shavings, are then filled in between the inner case and the regular summer hive-bodies surrounding it. A bridge connects the inner case to the outer for the entrance. The entrance consists of five $\frac{3}{8}$ -inch holes, all but one of which may or may not be closed during the coldest part of the winter. It is important that there be no ledge to catch snow and ice under the entrance; so the bottom-boards and hive-stand are turned around to leave an entrance at the rear as shown. A cake of candy, if there is a shortage of stores, is put on top. The cost of this arrangement is only about one-fourth of that shown in Fig. 1, and the amount of stores will be only a little over half as much. The amount of packing to the case in this way between the walls will be $2\frac{1}{4}$ inches on the sides, and 3 inches on the ends. While this is less than recommended in the Government case, the form of the winter chamber is such that less packing is required. The reason for this is given on page 596 October issue, middle of the second column. The objection to this general plan is that it must be unpacked earlier than the hives shown in Fig. 1.

frame, relatively shallow, is ideal as it is now used for late spring, summer, and early fall. It is just right for extracting and for tiering up, but not just right for winter unless it is stood up on end, as shown in the various Demuth plans. As I have pointed out heretofore, bees in box hives and in trees will often winter well when colonies of

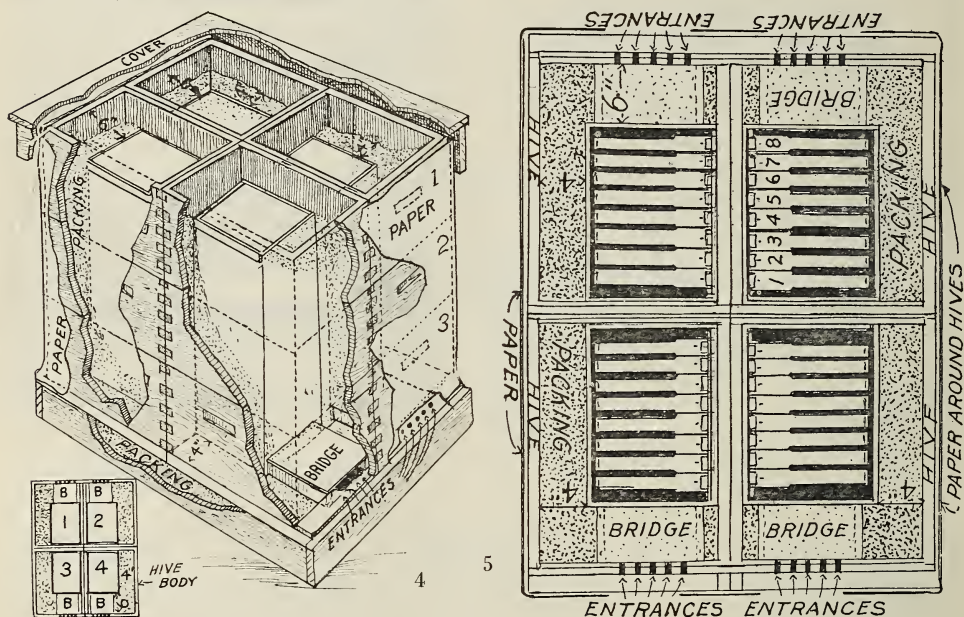
hanging as they do in summer. In theory, at least, the bees will have plenty of room for breeding without further attention, clear up to the time of harvest; and when they are unpacked they are ready for business, if not ready for swarming. Dr. Phillips says this scheme of packing eliminates spring management. For outyard

wintering or long-range beekeeping this one feature alone is invaluable. If it did not take \$9.00 worth of stores and require so expensive a case, it would be all right.

Entrances.

During the last year or so some developments have taken place in regard to the construction of entrances. After examining the colonies that wintered in the Government cases at Washington and at Painesville, O., I became convinced that one, two, three, or more holes would be very much better than a slot. In Fig. 9 we have before us the two styles of entrance-contracting cleats. George S. Demuth of the Bureau of Entomology explained to me that an entrance in the form of a slot 8 inches long and $\frac{3}{8}$ inch deep was not of as good construction as one made up of a series of holes.

ago I did not take very much stock in it, because I believed that a single three-inch hole like this would clog up, because dead bees gathered on the hive-bottom would soon close this entrance. As every one knows, such a closing would mean death to the colony. But Mr. Demuth and Dr. Phillips argued that if there were plenty of bottom packing—six inches or more packing around the sides, ends, and on top, there would be no accumulation of dead bees on the bottom-board. They proved to me that such was actually the case, when I visited the Government apiary last winter and spring. The bees were so warmly housed that when any dead bees fell down on the bottom, the live ones would poke them out of the single hole before they accumulated. The interior of the hive would be warm for the



Figs. 4 and 5 represent a modification of the Demuth plan as spoken of in Figs. 2 and 3. Some may prefer more packing space than is permitted in Fig. 3. More room can be given by putting four three-tier Langstroth hives in close contract on one bottom-board and placing the inner cases in the inner corners contiguous to each other. This leaves more packing for the exposed sides—4 inches on the side and 6 inches on the end. A common cover should cover the whole four hives, and in addition there should be a paper wrapping around the four hives to avoid possible air currents between the hives proper. This mode of packing is ideal where the colonies are placed in groups of four. While we did not use this scheme, we did use that shown in Fig. 3 with the most gratifying results.

It is a very easy matter for cold air to pass in at one side of the slot and warm air get out at the other side. In the new style as shown in Fig. 9, if all the holes are closed except one, and that in the center, during the coldest part of the winter the warm air in the hive can not very well escape to any great extent, and neither can the cold air from without penetrate into the hive. I am frank to confess that when this scheme of entrance was first brought to my attention a year

simple reason that there could be no rapid interchange of air either in or out of the hive.

Mr. Demuth illustrated this plan by saying that if a bottle with a $\frac{3}{8}$ - or $\frac{1}{2}$ -inch opening were filled with smoke, it would be very difficult to get the smoke out of it, for the very obvious reason that it would be next to impossible to blow air in and out both at the same time thru so small an opening. If we could imagine that this

same bottle, however, had a wide slot, by blowing into one side of the slot the smoke would be easily forced out of the other side.

A colony of bees in a hive is a good deal like a living-room with a stove in it. Suppose we should give that living-room an opening, on a level with the floor, on one side, the opening to be in proportion to the size of the regular opening that is used in the hive where bees are being wintered outdoors. If the living-room were 16 x 20, and 9 feet high (the proportions of a beehive), the opening in the bottom, to be of the same proportion as that in the hive, would be somewhere about 8 feet long by 4 or 5 inches deep. On a cold winter day the cold air could easily blow into this room, but there could be no interchange of air unless the cold air went into one side of the opening and the warm air out at the other side. If there were no other openings, that is precisely what it would do. If we were in that room we would have to build a pretty good fire in the stove, if it were a cold day outside, to make the room at all livable, and in order to get warm we would have to get as near the ceiling as possible or close to the stove. In a hive bees go up to the top or generate enough heat to start breeding. Now suppose that, instead of making a long slot in the bottom of the room as first proposed, we make a hole 4 or 5 inches in diameter. It is perfectly obvious that the cold air could not come in at that hole nearly as easily as it could come in thru the slot.

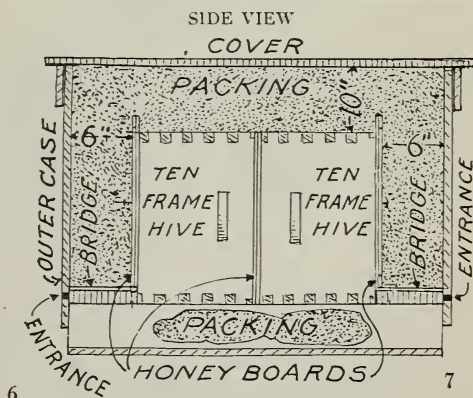
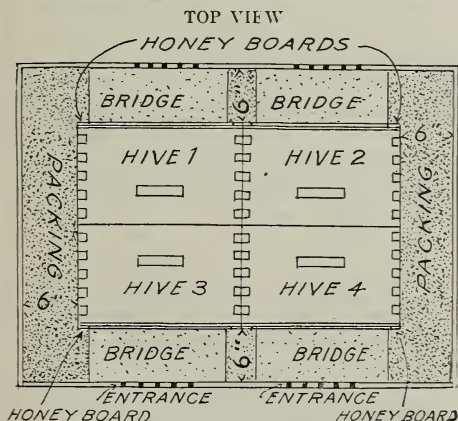
In modern apiculture we have compelled our bees to winter in a relatively shallow room—in many cases with a wide slot clear across the end of that room, and in other cases with the slot narrowed down to a little less than half the width of that room. It is perfectly obvious that the floor of that

room, or the hive, is bound to be cold. The bees are, therefore, compelled to get directly over the opening in the front to get away from the draft. This is exactly what they do in nine cases out of ten.

The plan that Dr. Phillips is urging for a winter bee entrance is a circular opening with a large amount of packing, and then making the room for the bees twice as deep by using two stories. Two things are accomplished: The upper part of that room is warm, and that is where the bees will be mainly during the coldest part of the winter if their stores are there; and, second, the change of air is so gradual that the warmth from the bees is enough to keep the interior so they will not suffer from cold.

The Demuth plan of wintering carries out precisely the same idea on a smaller scale, and it is exactly adaptable to a smaller colony with a lesser amount of stores. In fact, the Demuth inner case is more nearly ideal so far as shape is concerned than the two-story Langstroth hive, which is oblong, and, unless the colony is very large, the bees cannot fill it up.

I am giving the argument as it was given to me by Mr. Demuth, who has used the one-hole entrance for years with the greatest of success. Dr. Phillips recommends it, and proved to me that it works successfully both in Washington and at Painesville, O. This past summer I ran across a number of beekeepers who have been using holes instead of slots for winter entrances. B. F. Kindig, State Apiarist of Michigan, has been using a one-hole entrance for a number of years. He discovered its value accidentally. As a beginner, one fall he made up his mind to put paper wrappings around all his hives, as he saw that plan mentioned in the bee journals. To keep the bees from



Figs. 6, 7, and 8.—These show the scheme of packing where a Langstroth hive, containing 10 frames, is stood on end. In this case the regular hive constitutes the inner case. It is then necessary to use a specially constructed outer case to surround the four hives. The method of providing the entrance is shown in Fig. 6. This requires that the honey-board on the front be shoved up so as to leave an opening. A honey-board between 1 and 3 and between 3 and 4 should be shown in Fig. 6. This arrangement changes a regular Langstroth hive that is relatively shallow into a deep one for winter. It also makes it possible to use a smaller winter case than the one shown in Fig. 1. Top view looking down is shown in Fig. 6. Side view is shown in Fig. 7. The scheme shown in Figs. 2, 3, 4, and 5 will be cheaper than that shown in 6 and 7.

flying out and stinging him, he tacked a slat over the entrance of all his hives. He then put on the wrapping and tacked it down. The plan was to remove the slats after the bees quieted down in all the hives. This he did as he supposed; but the following spring he discovered that there was one hive he had overlooked, where the slat closing the entrance had not been taken away. That colony, he concluded, would be dead. He examined all the others, supposing them to be alive, but found them all dead. When he examined the one over whose entrance the slat had been nailed, he found it was lively and in fine condition. Ordinarily, closing the entrance kills the colony; but it is probable that the one nail in the slat left a crack, which, while it kept the bees from coming out, did not prevent

scheme has been working well with him every year, altho one year he wintered well with a slot instead of the holes.

R. F. Holtermann, who has wintered his bees so successfully in large quadruple winter cases, similar to those shown in Fig. 1, has been using $\frac{3}{4}$ -inch holes, all of them open. When I explained to him that he might get better results with one hole, he admitted that that might be true, but he had not tried it.

At this time I would hesitate to advise every one to contract entrances down to a single $\frac{3}{8}$ hole during the coldest part of the winter; but I certainly would use three or four holes in place of a slot, and during the very coldest part of the winter contract them down to, say, two holes, and a few colonies down to one hole.

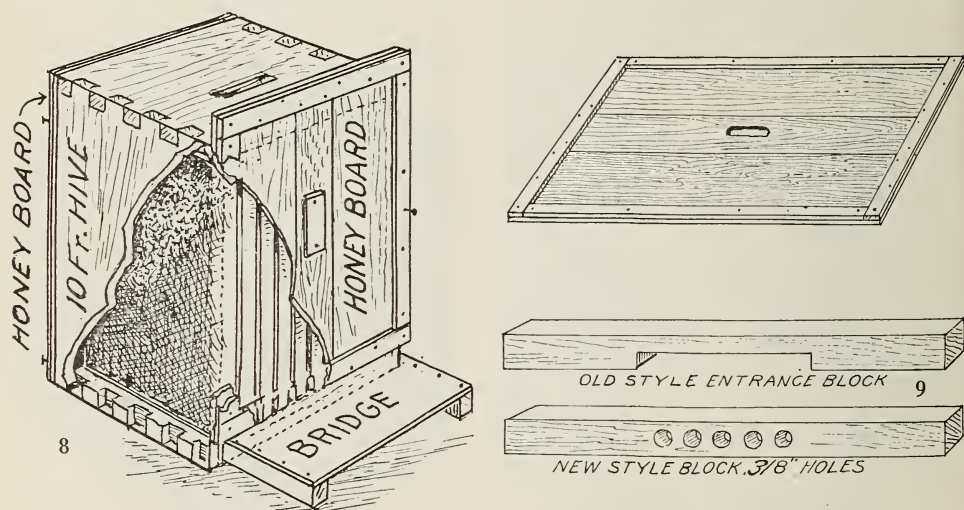


Fig. 9.—This shows the old and new style of entrance-contracting cleats. When either of them is pulled out of the hive it makes a summer entrance $\frac{3}{8}$ inch deep by the width of the hive. The lower one, having the holes, is much better than the upper one, and, according to Dr. E. F. Phillips of the Bureau of Entomology, Washington, D. C., all the holes except the one in the center should be closed during the coldest part of the winter. In late fall or early spring an additional hole or two are opened up. The one-hole entrance makes it impossible for a rapid interchange of air in the hive; and during the very coldest winter, says Dr. Phillips, the bees will be warm enough at any time, provided the hive is well packed, to shove out the dead bees. Unless the hive is well packed, and that means bottom packing, the one-hole entrance would clog up and kill the colony.

the circulation of air. This incident led Mr. Kindig, the following year, to try a limited entrance in the form of a hole, not knowing what the Government experts had been doing. He has been using the one-hole entrance with the best results, but said little or nothing about it because he supposed he was not orthodox and so had been keeping still.

At the field meet held in Michigan I had quite a long talk with J. N. Harris of St. Louis, who has for years been using $\frac{7}{8}$ -inch holes for entrances. To prevent mice from getting in he drove a nail across the hole to exclude the mice but not the bees. The

One thing more: No matter whether the slotted entrance or one consisting of a series of holes is used, it is very important that there be no doorstep or ledge to catch snow and ice. We have tested this out to our satisfaction, and some of the biggest beekeepers are emphatic in the statement that doorsteps just beneath the entrances are far worse than useless.

From a theoretical point of view the scheme of a one-hole entrance and a large amount of packing looks good; but as it has not been tried on a large scale by a large number of beekeepers, I feel that we should proceed carefully.

WHEN TO PUT BEES IN CELLAR

*It is After That Final Cleansing
Flight Taken on One of Those Sum-
mer-like Days in November*

By Belva M. Demuth

TO the beekeepers who winter their bees in cellars, the month of November brings some anxious moments, for usually one of its 30 days is the right one for putting the bees into the winter repository. I find occasional records in the bee journals of bees having been put into cellars the latter part of October, and quite a number for early December; but, thruout the region in which cellar wintering is practiced, the great majority of bees apparently are put in during this month—November.

Our own experience in cellar wintering is confined to a region considerably south of the imaginary line forming the present southern boundary of cellar wintering in this country; yet, even here, the right day for putting the bees in for best results in wintering usually occurs before Thanksgiving Day. In case of the few exceptions to this, when the expected flight day did not come until the last of November or early in December, there was always room for some doubt as to its being the right day after all, the probability being for those years that the early part of the month, or even late October, had offered a better day. Reports from regions far north of this would indicate that there is less difference in the date for cellaring resulting from latitude than one would expect.

The literature on this subject seems to attach less importance than our own experience would indicate, to a selection of a certain day as preeminently better for this purpose than any other day in the month. We think this is because most beekeepers who winter in the cellar have better winter stores than ours have been. During a number of years our colonies that were wintered in the cellar were put in in two installments, with sometimes an interval of several weeks between times. A part of the colonies in each installment had been given granulated sugar syrup for winter stores, while the remainder were wintered on natural stores. We soon learned that when we failed to select the best day for cellaring, the after effects were much less destructive when the stores were good than when they were poor. Here, as elsewhere, the presence of inferior winter stores so magnifies the results that differences which might otherwise escape attention are easily detected.

Very Early Cellaring Not Desirable.

The colonies are not in condition for their winter confinement until some time after the beginning of the broodless period. It frequently has been noticed that after a week of confinement to their hives by bad weather at the close of brood-rearing, there may be an accumulation of feces and an eagerness for flight, equal to that resulting

from several months of confinement at similar temperatures and with similar food some time later. Evidently, some little time is required for the bees to

change their mode of life from summer activities to the quiescence of autumn; and cleansing flights, after such activities have ceased, are necessary for their comfort and subsequent quiescence. Furthermore, the last of the young bees that emerge at the close of brood-rearing must have a cleansing flight to prevent discomfort and restlessness on their part. It is, therefore, several weeks after brood-rearing ceases before the colony reaches the greatest degree of comfort and repose so noticeable during the mild weather of autumn.

After once having reached this condition, the instinct for repose is so strong that it continues in temperatures that at other times would cause extreme activity. For this reason the flights at this time are meager or partial at best, even on warm days. Under such conditions we cannot expect a definite and thoro cleansing flight, in which all the workers take part, until some time later after a period of bad weather. We usually have this condition during the latter half of October, and sometimes early in November. Since it is highly desirable that all the bees of each colony have a flight not more than a day or two before being put into the cellar, beekeepers usually wait until the bees have been confined to their hives long enough to desire a flight.

Date For Cellaring Determined by Character of Flight.

Fortunately, such a day usually occurs sometime during November—a veritable summer day set in like a jewel among the sombre days of this season. The clusters then unfold completely, and probably every bee except the queen of each colony goes forth into the sunshine before the flight ceases. This is the day that determines when the bees should be put into the cellar. Sometimes there are two or three such days, but one is enough for the bees. If the next day is cool and cloudy, the bees should be put in at once, whether it be the first week or the last week of November.

Carrying the Bees In.

The first cool day after such a flight the bees are so quiet that they can be carried into the cellar with but little disturbance. If the day is cloudy scarcely a bee will fly out of the hives, if they are handled carefully, at temperatures even up to 50 degrees F.; but it is less trouble to carry them in, if the temperature is 10 or 15 degrees lower than this. We prefer that the hives be carried, (not wheeled) into the cellar and piled in separate piles, five hives in each pile. The bottom-boards are left on, and

the lower hive of each pile rests on a box about the size of a brood-chamber. When our colonies are cellared under such conditions, we can be sure we have made no mistake. If another perfect day for a flight should occur later, and we are inclined to wish the bees had been left out, we need only to look at the quiet and contented mass of bees hanging below the bottom-bars of the brood frames, to dispel any doubts.

to find the record from Stray Straws and elsewhere. What a storehouse of information his accumulation of record books must be, and how fortunate for the rest of us that a few careful people take time to record such facts as these! In most cases, the records indicate that the bees had a good flight the day before being carried into the cellar.

During the 24 years for which data are

Year	Date put in	Date last flight	Remarks
1888	Oct. 25	.....	Began taking in
1890	Oct. 28-Nov. 8	.....	.....
1891	Probably Nov. 1	Last week Oct.	.....
1892	Nov. 16	.....	.....
1893	.....	Nov. 10	.....
1894	Nov. 20	.....	After two hard freezes
1895	Nov. 13	.....	.....
1897	Nov. 22	.....	.....
1898	Nov. 24	Nov. 5	Poor wintering followed
1899	Dec. 1 and 2	Nov. 27-28-29-30	.....
1900	Nov. 20	Nov. 19	.....
1901	Nov. 15	.....	Delay on account of installation of furnace.
1902	Dec. 8	.....	Poor wintering resulted.
1903	Nov. 28	.....	.....
1904	Nov. 14-19	.....	Flight days after Nov. 19
1905	Nov. 29	.....	.....
1906	Nov. 19	Nov. 9	.....
1907	Nov. 21	Nov. 18-19-20	.....
1909	Nov. 18	.....	.....
1911	Nov. 13	.....	.....
1913	Nov. 8	.....	.....
1914	Nov. 27 (?)	Nov. 24-25-26	.....
1915	Dec. 4	.....	.....
1916	Nov. 20 (?)	Nov. 19	No flight between Nov. 1 and Nov. 19

Table giving the dates of Dr. C. C. Miller's cellaring.

It sometimes happens, perhaps once or twice in a lifetime, that November fails to furnish such a flight day as I have described. When this happens poor wintering is inevitable, unless the beekeeper by some rare instinct was induced to put them in the latter part of October.

In this connection, I have tabulated the dates on which Dr. Miller has cellared his bees since 1888, as far as I have been able

available, the average date for setting in is Nov. 20. They were put in twice in October, three times in December, and 19 times in November. They were put in before Nov. 20 10 times, after Nov. 20 11 times and on Nov. 20 once. Throuout these reports there are many expressions of regret that the bees were not put in earlier, but no indications that he ever regretted putting them in too early.



DR. MILLER, in his department of Stray Straws, in our issue for October, page 602, referring to the skyscraper propped up with rails as shown on the cover of the September number, frankly said he had "never seen anything like that in real life." When he adds that he "suspects" that "such things are so rare that they hardly need be considered," he voiced a very natural opinion. I might have expressed it similarly myself six months ago. Pictures on pages 589 to 593 inclusive show that the skyscraper is by no

SKYSCRAPER BEEKEEPING

*New Conditions and Possibilities
Brought About by the Production
of Extracted Honey*

By E. R. Root

apiaries of skyscrapers—perhaps not so tall throuout as the one shown in the October issue, but showing yields which, on account of good wintering, good locations, good management, and the production of extracted honey, are by no means uncommon.

Take the single case of L. S. Griggs of Flint, Mich., pictures of whose apiaries and individual colonies are shown in this issue.

means very rare. The half-tone illustrations in this issue are further proof of this statement. We shall have illustrations from time to time showing whole

From 300 colonies he took over 1,000 supers averaging 45 pounds to the super. This would make an aggregate of 45,000 pounds of honey, or over $3\frac{1}{2}$ supers on the average, not including the brood-nest, for every colony he had in his apiaries. In other words, the average of his colonies was four and a half ten-frame stories high. If they had been eight-frame they would have been nearly six stories high. As there are always some colonies that will fall below the average, it necessarily follows that other colonies will have to go far above the average. Mr. Griggs would, therefore, have a large number of colonies six stories high for ten-frame and eight-story for eight-frame. The

labor. When I asked him how he would lift those heavy supers off from those skyscrapers he said, with a twinkle: "If the bees put it there, I'll find a way to get it down. That's the least of my trouble."

I must confess that I myself was surprised to note the size of some colonies in Michigan, New York, and Canada during the past summer; and the large number that would go into the skyscraper class.

Four conditions make a skyscraper possible and not so uncommon: (1) The production of extracted honey as the result of war-time conditions; (2) good wintering; (3) good management; (4) good location. Mr. Griggs has all four of them. I positively



Fig. 1.—A general view of one of the apiaries of L. S. Griggs, Flint, Mich. If one will take the pains to count, he will see that many of these skyscrapers are six stories high, and some of them $7\frac{1}{2}$. Six 10-frame stories amount to 60-frames capacity, which, translated into eight-frame hives, is the equivalent of $7\frac{1}{2}$ stories, or precisely the same thing that was shown on the cover of *Gleanings* for September, and which our good friend Dr. Miller considered of rare occurrence. Figs. 2 and 3 are the details of another yard belonging to Mr. Griggs. A good location, a good beekeeper, and the production of extracted honey make a skyscraper not an uncommon occurrence.

illustrations from photographs show a number of skyscrapers taken out of the Griggs yards, and they by no means represent his best. Mr. Griggs does not buy a pound of sugar for feeding. He makes his bees fill an extra super of combs with good honey. One of these he gives to every colony he puts in the cellar.

I said to Mr. Griggs, "You must have had abnormally good wintering and a good season." I do not remember his exact words; but the impression conveyed to my mind was that this was nothing out of the ordinary, since he had turned his attention to the production of extracted honey; and he further added that, since changing over, he would be able to take care of 50 to 75 per cent more colonies with the same amount of

know there are some in the same bee territory, or equally good, who do not get anything like such results. If this is the case, our good friend Dr. Miller may claim that the good beekeepers are rare. I do not know about that; for during the past summer it seemed to me they were all good—that is, where they have gone beyond the 100-colony stage. A man who can make a hundred colonies pay can usually handle between 300 and 400, and make a very good living indeed during these war times, providing, of course, he has the locality and strong colonies in the spring to back him up. Dr. Phillips of Washington says the key to success in beekeeping is good wintering, and good wintering means big colonies.

Perhaps my good friend Dr. Miller may

meet me here by the assertion that good colonies are not common. I have my doubts on that point also; but it is fair to say, however, that a good beekeeper in a poor locality will do better, probably, than a poor beekeeper in a good locality. Now, then, when we put the combination of a good man in a good place we get results like those secured by David Running, Leonard S. Griggs, Ira D. Bartlett, R. F. Holtermann, Dr. C. C. Miller (when he has a favorable season), and dozens and dozens more whom I could name, if I did not fear that the mention of those names would call down upon my head censure for letting other people know that they are in a good locality. Even as it is, I may get my ears boxed, metaphorically speaking; but I will venture the assertion that there is not a man who can go into the localities I have mentioned and compete with them, for the reason that they **already know the locality**. Don't forget that, Mr. Prospective Poacher. It would take you a good while to learn to know them as well. You would get left in the race badly if you made the attempt. It goes without saying, that all these men and other good men in good territory should be left in possession of that territory within at least three miles of any one of their yards. But why crowd or overstock a locality? There is some fine territory where there are no bees; and if any of our readers wish to know where it is, if they will write me I will put them next to it. There is no reason under the sun why one beekeeper, in the eastern States at least, should encroach (or poach) on another; and a good man will not do so, even when he consults his own interests.

Now there are several important points that I wish to emphasize, for upon these points hangs the success or failure of beekeeping. First of all, skyscraper beekeeping requires good wintering. Colonies that just squeeze thru, wintering with only about two or three frames of brood and bees, may not amount to very much. Good wintering means strong colonies in the spring. I do not care how good the honey flow is, if the colonies are not large, they will not give good results. Good wintering largely solves the springing problem.

In the production of **comb** honey it is possibly true that colonies abnormally strong at the beginning of the season will not do as well as medium colonies, on account of the fact that a colony too populous may waste its time in trying to swarm before the honey flow is actually under way. Some very good comb-honey producers have given expression to that sentiment; but now that nearly every one is running to the production of extracted honey on account of the war, it is hardly possible to winter too well nor to have colonies too strong; and the lesson is that all the beekeepers in the United States should follow the instructions given in these pages in the September and October issues and in this one also. No man can go into the skyscraper class unless he winters

well. Many won't follow directions because it "costs too much"—penny wise and pound foolish.

The importance of knowing the locality; of being in a good locality in the first place; and last, but not least, being a good beekeeper, is so obvious that I do not need to emphasize it further here. The importance of good wintering—and that, of course, means good springing—has not been emphasized enough; and because this fact was hammered into my head in going over the country last summer I feel it my patriotic duty to my country to hammer and continue

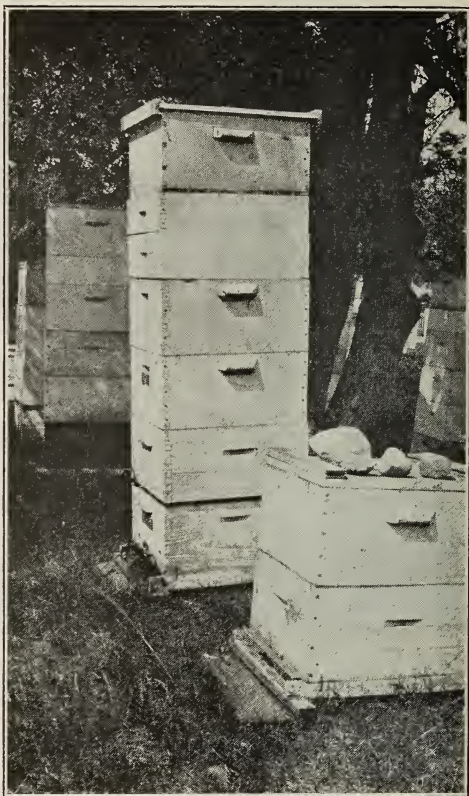


Fig. 2.—Details of one of Mr. Griggs' skyscrapers. There were eight combs to the super, bulged out, of course, in a ten-frame hive-body. In the eight-frame supers it is customary to have six or seven frames to the super. The super shown in the engraving ran about 45 pounds to the super for the entire number of colonies, or an aggregate of 45,000 pounds for 300 colonies.

to hammer on the importance of good wintering thru these columns until next spring.

One thing more: I'll be criticised for making beekeeping appear too rosy. The average man, either because he does not live in a good locality or because he does not have the requisite ability, can not get into the skyscraper class; but the good man in a good locality can and ought to get there.



FROM THE FIELD OF EXPERIENCE

CONVERSATIONS with DOOLITTLE

A Discussion of What Can be Done to Improve the Stock of Bees

"Probably no other branch of rural industry will show so large a number of improvements connected with it as will beekeeping, but the improvement in stock, with the bees, has not kept up with that in other lines of the animal kingdom. Are the great mass of bees today any better for honey-gathering than in the days of Samson, Virgil, or Aristotle? By improvement I mean not simply purity of breed, or color, or gentleness, but rather the ability and disposition to gather the largest possible amount of honey, and store it in the whitest combs free from dirt or propolis, or the largest amount of well-ripened honey for the extractor, with the power to transmit these qualities with a good degree of certainty to the next generation."

Well, really, you go back so far that I have little authority or knowledge to help me in answering your question. Just how big that swarm was that went into the "strange hive" of Samson, how much he obtained at the end of the harvest, or what disposition he made of the major portion of the product, the Bible does not dwell upon. Neither does it tell us as to the whiteness of the combs, nor how well the honey was ripened; and I find nothing in the Bible account of the honey-extractor. To tell the truth, I am still more ignorant as to the bees of Virgil and Aristotle. But I do know that the black bees of 50 years ago were not to be compared with my Italians of today. And I speak this from the knowledge I have gained in working with both all along down thru the past half century. I am in perfect accord with all those who are striving to improve the bees we now have, and who have done much planning along this line. However, there is a reason why bees cannot be improved as rapidly as can other stock upon the farm. With other farm stock the male can be controlled, but we beekeepers have the control of only the female. When it comes to the control of the male, which is the major part in breeding all animals for an improvement, we are almost entirely handicapped, as any effort to control the drones similar to other stock has proved abortive. I am aware that the attention of beekeepers has been more largely taken up with hives, implements, methods of manipulation, and discussions of different races or breeds of bees, supposed to already be nearly perfect, like the Italian bees and queens of a direct importation from Italy; but the one who reads the advertising pages of Gleanings will see that

there are many who believe they are making advancement along the line of improvement of the bees in the United States and Canada. The way is still open for a still greater advancement all along the line, by each beekeeper bringing the average of his bees up to that of his very best colonies. If he finds during the surplus honey harvest two to four of his colonies which give a maximum yield of honey, let him prepare the way for this improvement and advancement, by selecting out for a queen mother the one giving the highest yield, and one equally good, if possible, for a drone mother. By beginning with the drone colony a little before the ending of the main flow of nectar, thru giving a large amount of drone comb for the queen to fill with eggs, and then keeping this colony well supplied with stores, so that all these eggs for drones will be matured and held ready for use as soon as most of the drones are killed off, and having the young queens of mating age when wanted for these drones, quite a share of the mothers of our colonies the next year will show an advancement over that of the previous years. Then, following out these lines for a term of years, we shall notice that there is not so much difference between the yields as there was formerly, and that all will come up well toward what was given by the very best of a decade before. It is hardly to be expected that all the honey secreted by the flowers will ever be gathered, even by the best of bees; nor will the best or most productive bees it is possible for man to produce, ever gather nectar where none is to be had. However, if we breed from the most productive colonies till 50 or 75 will gather what 100 have been gathering during the immediate past, we shall save at least what is required to keep the extra number of colonies. It is estimated that it requires from 65 to 90 pounds of honey to get the average colony thru a year; and where any field is limited as to flora or the nectar yield, with colonies which will give double the amount which was done in the past, this saving will give as much in surplus as was required by the extra number of colonies we formerly had to keep. If in addition to bringing our bees up to perfection along this honey-producing line, we can breed so as to give us such as have the least disposition to swarm, we can gain another point; for, when working for comb honey, if our best bees are much inclined to swarm, and swarms issue during the first half of our surplus nectar yield, our prospects of a good honey crop are materially lessened, as with the prime swarm go the laborers which should do the work in the sections. And if we return the swarm, it generally leads to the contraction of the swarming fever, which, when fully

FROM THE FIELD OF EXPERIENCE

carried out by the bees, destroys nearly all prospects of the securing of any fancy honey, and very little of any other kind. If we can find a case with the desire to supersede one of our best thorobred queens, and raise all of the young queens from her, quite a gain can be made in this way; and very nearly the same can be made by rearing our queen-cells above a queen-excluder, as this places the bees very much in the same position and desire as does a case of supersedure. It is well worth while for each apiarist to do what he can along these lines.

G. M. Doolittle.

Borodino, N. Y.

BEEKEEPERS FOR LIFE

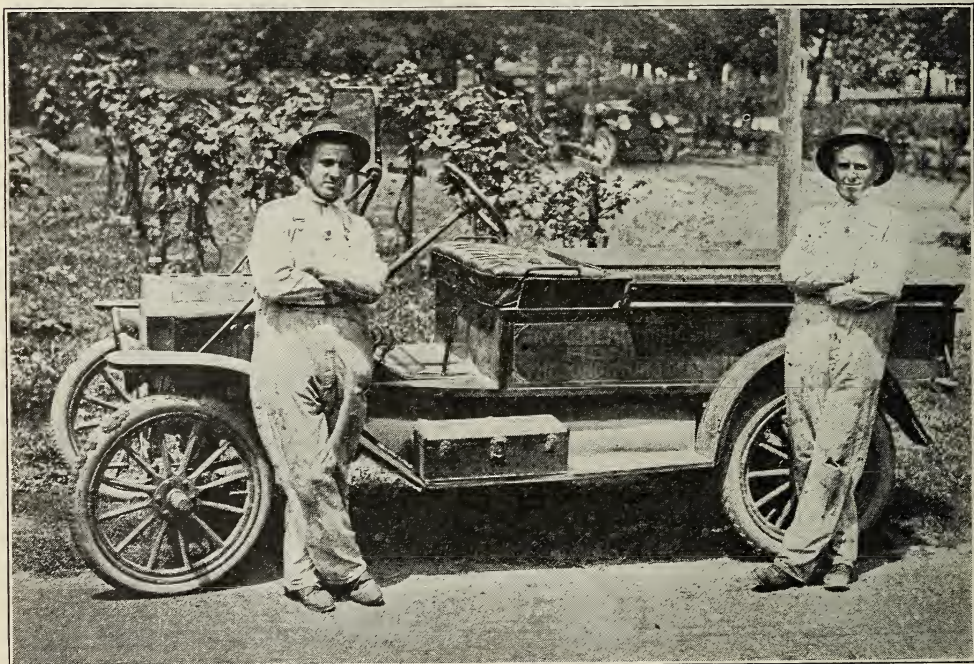
Two Entertaining Youngsters and Some Things They Do and Study

"If we live to be 80 years old, like you, we shall still be beekeepers." So said Will Klabuhn to A. I. Root on June 29, when he and his brother, needing some supplies in a hurry, visited the Home of the Honey Bees. These two, with their father, comprise the firm of Klabuhn & Sons, and with the "pep" and enthusiasm they display, it is not strange that their fancy-comb and extracted-honey apiaries are known for a good many miles. Their home in Conneaut, O.,

away in the extreme northeast corner of the State, is 106 miles from Medina. Starting at three in the morning, they drove 78 miles and surprised their sister in Cleveland for breakfast, then drove on to Medina, stopping on the way to rescue a man and woman and six children imprisoned under an overturned Ford. The young giants took hold of the machine where it lay, upside down against a bank, tipped it back onto its wheels, when it was able, altho battered and torn, to limp on its way, with its badly scared crowd, thanks to the two heroes of this tale. Some Ford story! The boys arrived in Medina about 10 o'clock and we held an informal bee convention. "The question box, as usual, was the chief feature of the convention"—and everybody asked and everybody answered.

Their winter loss was only 7 per cent. Young queens that kept up brood-rearing late in the fall were largely responsible for this good record. The boys have no use for old queens simply because they are too likely to quit laying in the latter part of August, so that the colonies go into winter quarters with old, worn-out bees.

Will Klabuhn had just had an interesting experience with an unscrupulous or careless Southern breeder. (Not a Gleanings advertiser.) Just a year ago he ordered a dozen queens from this breeder, and sent the mon-



Will and Walter Klabuhn of Conneaut, O., "snapped" just after their arrival in Medina one June day last summer. Bee-suits are just right for a quick automobile trip.



FROM THE FIELD OF EXPERIENCE



ey to pay for them. The money order was cashed, but there was no further acknowledgment. Failing to get an answer to his letter, he wrote the breeder a second time, this letter being registered. The breeder signed for the letter, but forgot to answer it, just as he had forgotten to fill the order for the queens or return the money.

Two or three months elapsed, and by this time our friend was getting a trifle hot under the collar. He walked in to the post-office one day, stated his grievance and was directed to write a full history of the case to the nearest postal inspector, whose address was given. After this, he heard nothing of the affair for some time until one day a letter came from a division inspector, inquiring whether the matter had been adjusted. On replying that it had not, there came another lull of a month or so. Finally, there came a letter from the breeder—a very unexpected sort of an epistle. The Southern man explained that he had been peeved because Mr. Klabuhn had asked for his money back so soon and had decided to make him wait a while. But he wound up by enclosing a postal order for the full amount originally sent, with interest at 8 per cent, beginning July 1—this last by order of the postal authorities. The inspectors may be slow, but they are sure.

The Klabuhn boys in scores of instances have taken queens from colonies diseased with European foul brood, put them in perfectly healthy colonies on combs with no trace of disease, and in four weeks found European foul brood. They say that queens from colonies so diseased, will, if introduced into healthy colonies, be responsible for a reappearance of the disease in 95 per cent of the cases they have tried. This is a point over which there has been considerable controversy. These young men insist that they have tried it so many times that they are sure the queen is responsible.

Of course, it has been known for a long time that Italian bees are more immune than black bees, and that some Italian stock is more immune than other Italian stock. Now, if the contention of the Klabuhn brothers is true, is it a case of transmitted infection by the queen or transmission of a weakness for (or tendency toward) this disease, obtainable from common sources in a locality? In other words, does the queen carry the disease, or is a queen from a diseased colony simply non-resistant to sources of contagion accessible to all colonies? If the latter is true, then a queen from a colony diseased with European foul brood, introduced to a perfectly healthy colony on healthy combs in a locality where this disease had never been known, ought not to result in trouble afterward. Who can give positive proof?

Mr. Klabuhn and his sons, as mentioned

above, are producers of both comb and extracted honey. Admitting the strong tendency toward the production of extracted honey now, they predict that in a couple of years or so, the pendulum will again swing the other way, and soaring prices will once more cause a rush towards the production of comb honey.


Here in Medina we have had some experience in buying out small beekeepers living near by, more especially those who do not take care of their bees and who might therefore allow them to become diseased. Several of these we have bought out twice and even three times, only to find that they have some bees again after a year or so. The Klabuhns have had this same experience. When we asked what they finally did in such cases, they said, "Buy 'em out, bees, hives, tools, and all. Don't let 'em even keep a smoker. If they have a smoker lying around, it will keep reminding them of bees, and first thing you know they will have some more." Perhaps that's the best way, to take everything, even the nest egg.

Of course intelligent beekeepers are always welcome, whether they are beginners or experts; the dont-care kind are unwelcome everywhere whether they are amateurs or old timers.

[Later.]—The question as to whether European foul brood is transmitted to healthy colonies by the introduction of queens from diseased colonies, we decided to test out for ourselves. We accordingly obtained 37 queens from colonies badly diseased. These we introduced to two- and three-frame nuclei, and so certain were we that the disease would not appear that we started this new apiary near Medina. In four weeks' time the nuclei had built up into full colonies, and now after a period of nearly four months we are glad to say that no disease whatever has yet appeared. In the cases cited by the Klabuhn brothers, we wonder if the disease would have appeared, had the apiary been started in an entirely new location, so that there could be no possible source of infection aside from the queens.

Medina, O.

H. H. Root.



A TIMELY TOPIC JUST NOW

Is Membership in a Beekeepers' Association Really Worth While?

The above question has often suggested itself to the writer, as perhaps it has to others. The answer, of course, depends upon the association, whether or not it is "onto its job," and whether or not its officers are men who are anxious that each member receive his due share of the profits and pleasure. That some organization is needful for



FROM THE FIELD OF EXPERIENCE



the realization of the best in beekeeping is self evident, for we learn from one another as well as from books and experience, and sometimes more quickly, especially if instruction comes thru watching a skilled demonstrator. There are scores of perplexities which present themselves constantly, no matter how long one has been in the business. Many of these are of a purely local nature, and therefore ought to be considered by the local association for the benefit of its members. Often upon the right kind of information at the proper time depends the success of the year. It is especially in solving local problems and furnishing helpful information when it is needed, that the association ought to be of great benefit.

Let me be more specific. Each beekeeper naturally wishes to receive the best price for his honey, especially if he has a good grade. But, if he lives in the country, how is he going to find out when prices have advanced? His customers will not tell him. Not until he has well nigh sold out his supply does he, perhaps, discover that he ought to have received at least 50 cents more for each dozen jars than he did receive. Had he received a card from the secretary of the association, stating the local price of the best grade of honey, it might have meant to him the price of his membership in that association a dozen times over. It is worth while to belong to an organization that considers your profit as well as your pleasure.

Beekeepers ought also to meet more often and to know each other better. As a rule, they are an intelligent class of people whom it is worth while to know. One great "field meet" is not enough for extensive information and good fellowship. A day is too short in which to consider various subjects which deserve attention. As each season of the year has its special problems a timely meeting should be planned to discuss those problems. Already a helpful meeting should be planned for the fall or early winter, at which meeting each member should report as to his observations and experiences of the beekeeping season just closed, giving any new lessons learned.

Perhaps somebody may say that to do all that ought to be done by an association costs money. Very true; but who would object to an extra charge, if the benefit was commensurate with it? Show a man the value of a thing, and, as a rule, he will not begrudge the spending of a few dollars. If, however, he gets little or no return, his interest soon lags and his fist tightens. In order to make the association of value to its members there must be mutual interest; it must be freely and liberally supported, and, in return, it should give to its members timely and necessary information.

Warren, R. I.

H. W. Watjen.

THE QUADRUPLE CASE DEFENDED

How a Little Modification Makes It Inexpensive and Labor-saving

Some appear to think the quadruple winter case is very unhandy, since there is a great amount of work in packing and unpacking. The way I use the cases, I do not think it unhandy or that it takes as much time as some other methods of packing for outdoor wintering. I use a permanent platform under each four hives made out of 1-in. rough pine fastened together by three pieces 1 in. by 4 in. and resting on three pieces of 2 in. by 3 in. The platform keeps the bottom-boards dry, which is a considerable saving, and incidentally keeps down weeds and grass between the hives where it is hard to cut.

The hives are arranged in a row of fours between two hedges of raspberry bushes, which make a fair windbreak. The entrances face east and west, and the row runs east and west, thus making it possible to work up or down the row without passing in front of any hive.

In all the descriptions of this system that I have seen in Gleanings, I notice that the hives are moved off the platforms, and sometimes moved to a row or changed in some other way.

One of the great advantages of the permanent platform is that the bees are not disturbed and confusion is avoided. Another is that the hives face east and west instead of north and south, thus giving every hive the same advantage and avoiding drifting.

In packing I simply move the hives together, fasten the sides of the case together, and slip the case over the hives. The case telescopes over the platform about an inch. I arrange the covers over the entrances and put in the shavings up to the level of the hives. Then the hives are covered with an old sack, and the covers are put back until ready for final packing. The hive covers are put back upside down, as the hives are close together; but that doesn't matter as the roof of the case will keep them dry. I aim to have this packing done early in September because I find early protection means lots of fall-hatched bees, which spells surplus next year. It also does away with any winter-nest bother, as I find that nine times out of ten the bees have the honey carried over from the two outside frames, which I take out of any hive that is not strong and replace with a division-board. I plan to do this with all hives and put in a chaff division-board which will give two inches more protection.

In feeding I turn up the corners of the quilts (as shown in Fig. 1), and invert a 10-pound pail of syrup. You do not have to put

FROM THE FIELD OF EXPERIENCE

in supers to feed, if you are careful to feed at opposite corners and put a sack around the pail.

After the feeding is done (in October) I put a large quilt over the individual quilts. For this I cut an old sack down the seam, thus doing away with the loss of time and the muss in cleaning out the shavings when you look thru the hives in spring. Over this quilt I dump in about eight or nine inches of packing, and put on the roof. Then it is

nificent—one hive lost by dysentery, and a small nucleus I was experimenting with, and three queens missing out of 55 hives. Considering the length and severity of last winter and the poor care the bees got, I am satisfied with at least some air drainage. This winter I have a windbreak at both ends of the row. In the spring examination I put the top shavings from the No. 1 case in a barrel. The shavings of the second case go in the first, and so on down the line.

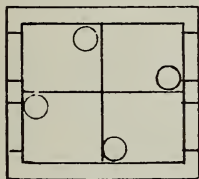


Fig. 1.

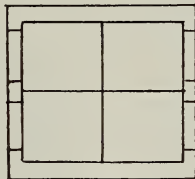


Fig. 2.



Fig. 3.

all right till next April, when one just wonders if he did put in enough sugar at 10 cents a pound. These winter cases are left on till the last of May or first of June. Of course, after the settled weather comes in the spring, the top shavings are taken off and stored, and the covers put back upside down until the cases are packed away. Leaving the bees packed as long as this would not work as well if they were moved around in unpacking, as by this time the bees have their home spot thoroly localized and their "trade routes" established. The cases are fairly close together, about seven or eight feet between fours; yet each entrance is always within four inches of the same spot, thus saving a lot of confusion. When the cases are first put on or just taken off, the appearance of the hive entrance is greatly changed; yet the confusion is only momentary, as the bees always go to the exact spot regardless of appearances. This is proved by the removal of a hive for a while or turning it around, as the bees will come to where the entrance should be.

As to windbreaks, I think it is quite possible to have too much of a good thing. At our last place I had almost perfect (?) wind protection. The yard was clustered in two rows between two large barns and a dyke on the west side. I found that nearly all my winter losses were in the south row tho it was better protected than the north row. The south row was in the shade of this barn from about October till February and the air was damp and gripping. In this locality the bees were in the open; and last winter, on account of my illness, they had no windbreaks except the two rows of raspberry bushes. They were in the full blast of the wind, and in the full sunlight. There was some air drainage. Of course, the hives placed as they were, served to protect each other. The result of this neglect was mag-

By catching the four corners of the top quilt, after the bulk of the packing is removed, one can gather the remainder quickly, and leave the hives clean and ready for action.

As to the cost of the case, I think five or six dollars cheap, when you consider that the individual chaff hive is the only plan approaching the quadruple system. Compare the price difference of a good chaff hive over the single hive, and I guess I will take the quadruple cases with the neighborhood spirit and warmth.

Chas. Bowden.

Brantford, Ont.



Gleanings has taken great interest in the disease of nosema apis. As you know, the disease has played havoc in our country from top to bottom. I am told that within a radius of ten miles scarcely half a dozen hives survived last winter. In November of that winter I put my two hives under cover so that they were kept dry. In February I was horrified to find hundreds of bees, some dead, and others in different stages of exhaustion crawling out from the hives and dropping on the floor, from whence they could not rise. As it was too cold to disturb the bees much, I put a few drops of carbolic acid into some water and scrubbed the excrement from the alighting-boards. This I repeated on several occasions. Thereafter the bees kept quiet, and I saw nothing more of them until a couple of months later when I found the parent colony well and strong, and the other fairly good. I came to the conclusion that the fumes of the carbolic acid must have penetrated the hives and disinfected the interior.

Walter Taylor.

Formby, Lancaster, England.

INCOMPLETE sections may be sold to local customers at a reduced price; page 597, and to this may be added that some will do well to extract the honey from such sections, using a special frame to hold the sections.



* * *

Each of the three colonies which stored the most for me this year had a queen which was born in 1916. If I should requeen annually, I feel sure it would be at a loss. It may not, however, be the same with all others.

* * *

M. T. Pritchard mentions on page 615 a thing which is not generally known; namely, that it is quite the common thing for bees to start queen-cells upon the introduction of a queen, these cells disappearing after being sealed.

* * *

The question is raised on page 555 whether bees ever hold eggs for a time and then hatch them. Dzierzon reported that bees did that very thing, and I remember at least one case in my own experience which I could account for in no other way.

* * *

"Breed from the best" is a good slogan, and another that might well go with it is this: "Kill all queens that fall below the average." The trouble with some beekeepers is that while they breed only from the best, so far as they do any special breeding at all, they are inclined to leave to itself any colony having a laying queen, no matter how poor the work done. A poor queen is working against food conservation, and should be treated as a Hun.

* * *

"I think that, if the Lord had intended bees to live in a cellar, he would have made one for them," says J. C. Mosgrove, page 601. The Lord does much of his work thru others. He intended horses should have barns in this region, and he gave man the ability to build the barns. He also gave him ability to make cellars where cellars are needed. Moreover, friend Mosgrove, if, as you say, the Lord gave bees a hollow tree, are you not flying in the face of Providence by using a hive instead of a hollow tree?

* * *

You say, Mr. Editor, page 602, that sky-scraping piles of hives that need stepladders are not so rare as I suppose. But are you playing the game entirely fair when you quote such men as David Running to prove your point. Are not David Runnings of rather rare occurrence? Allee samee, you have a chance to know a lot more about it than I do, and I'm ready to modify my

supposition in accord with your observation. Now please tell us, taking all the colonies in the country, in the hands of all kinds of beekeepers, what

per cent of them should you say have such piles over them as are under consideration? If you say it's more than one in a hundred (I had supposed there wasn't one in 500, but you have somewhat changed my view), I'll climb right down and change my "suppose" some more.

* * *

Glad to see that picture of Mel Pritchard, page 636. I've always had a good opinion of him, and the picture agrees with that opinion. And that reminds me, is there anything in the laws or constitution of Ohio to prevent the readers of a periodical from knowing what its managing editor looks like? [He'll take a chance on your thinking better of him before than after seeing his picture,—and the constitution of Ohio certainly ought to forbid the publishing of any such picture, whatever.—Mng. Editor.]

* * *

Hamlin B. Miller grows wrathful, page 611, when considering vitriolized corn juice de-vitriolized, and then sold under the claim that it is "as good as honey." Keep your temper, Hamlin; "all things come to him who waits"; and the public is slowly learning that honey is in a class by itself, and for deliciousness and wholesomeness has no substitute. This year, in this locality, the public is more eager for honey than ever before, altho they are paying more than twice the former price for it.

* * *

Mention is made on page 460 of "the fact that the beekeeper can produce a pound of extracted at about half the cost he could produce a pound of comb honey." I wish I knew whether that "fact" is really a fact. We used to talk about a gain of 50 per cent by extracting; now there is more or less talk about twice that much gain. Has there been any advance in the amount extracted, or has there been new light on what has always been done? Anyway, Mr. Editor, can you tell us why the change in the estimate?

* * *

"We believe a queen after having had a honey bath is never quite as good as before." quoth ye editor, page 555. That may be so, but please tell us why. If you should be held under water until an uncomfortable amount of water had got into your lungs, you wouldn't be quite as good as before for a little while, but you would probably be as good as new in a short time. Would it not be the same with a queen if she should in-

spire a lot of honey? Or is there some other harm done? [After being nearly suffocated, how can a queen be as good as before? Any man placed almost at the point of death is seldom as well afterwards.—Editor.]

* * *

The treatment of European foul brood in British Columbia, we are told on page 614, was formerly to "wipe out the colony and hive by fire," and has now been modified, the treatment being in part: "First day—kill queen; * * * 21st day or later—introduce new Italian queen; * * * all combs badly affected with disease should be removed from the hive and burnt." I wonder if our genial friend, F. Dundas Todd, couldn't be induced to do a little more modifying. Eleven days or more might be cut from that "21st day," and I don't believe the treatment would be less effective in one case in a hundred. Just how badly should a comb be affected before being burnt? If a comb slightly affected may be saved, would not exactly the same treatment and the same trouble save the worst affected?

* * *

That case reported by J. B. Douglas, page 555, in which the bees began drawing out full sheets of foundation in the super at the bottom, is interesting. Mr. Douglas asks whether shallow supers might be better, evidently thinking that the height of the super is a factor in the case. It is entirely possible he may be right. The rule is that bees build from the top downward. But I have known exceptions to that rule. By some means I once left a full-depth hive-body over a brood-chamber without filling the hive-body with frames. The bees began building on top of the top bars, working upward. Where the comb rested on the top bars it was an inch or so in thickness, coming to a thin edge at the top, just the reverse of their usual proceeding. I think I hear some one say, "But the bees ought to have known that such combs would be unstable, and that before they reached the top of the super they would tumble over." Well, the bees provided against that, and in a very wise manner. They built the combs in circles, my recollection being that the circles were from 4 to 6 inches in diameter. Such combs might easily be two feet high or more without danger of falling over. Likely, if the super had been shallow enough, the bees would have begun at the top. Also, they would have begun at the top, if a very small piece of drawn comb had been at the top in one of the frames. It may be mentioned in passing that the weaker the colony, the more likely to begin at bottom instead of at top.

* * *

I wish, Mr. Editor, you hadn't settled so far away from Marengo. I'd like a chance for a long talk with you about some of the things discussed on pages 602 and 603. Maybe we could get together. The point of greatest divergence is perhaps the one about

the purity of air in cellar. You agree with me "most emphatically on the importance of having plenty of fresh air when the temperature goes above 50." Below that you don't seem to think it makes so much difference. It seems to me of the greatest importance to have the air pure, even if the mercury should go down to 32 degrees. I confess to a good stock of ignorance on the whole subject; but at least one may ask questions. Is it not true that the more air bees use, the more important it is that that air be pure? If they are entirely dormant, not using any air, can it make any difference whether the air be pure or not? Do they not use air in proportion to their activity? If there is the least activity with 57 degrees in the brood-nest, will they not at that point use the least amount of air, and will that not be the point at which purity of air is of least importance? You say, "When the mercury goes above 60 then it is that the bees require a great deal of air." Well, now, suppose the mercury goes so much below the proper point that the activity of the bees is the same as at 60; will the bees not use just as much air as at 60, and will not the importance of its purity at that point be the same as at 60? Mind you, I'm not dead sure it is so, but just groping around after the truth, and I'll be glad to know what you think about it.

As to temperature of cellar. You say "Better keep the temperature down to 45 if possible." That was the orthodox temperature 40 or 50 years ago, and remained so until Dr. Phillips upset traditions by his experiments. Do you think Dr. Phillips will stand for 45 degrees? I know it is held that the cellar temperature should be lower than the best temperature for the brood-nest, but what reason is there for such belief? Are the bees necessarily obliged to keep up a certain amount of activity, without reference to temperature? If not, does it not seem that the nearer 57 is the temperature of the cellar the easier it is for the bees to keep the brood-nest at that point? Do you really think it easier to keep the brood-nest at 57 in a 45-degree cellar than in a 50-degree cellar? If the bees are utterly inactive, will not the temperature of the brood-nest be automatically that of the surrounding air in the cellar? Or is there a necessary activity, as before mentioned?

You "believe it is rather dangerous to give it out to the general public to shoot up the temperature 'occasionally.'" That's a leaf taken from my own experience of many years with a too-cold cellar; and please note that I advised it only with such a cellar. When the bees became uneasy (I suspect the uneasiness was caused by the bad air as well as by the cold), I warmed the cellar to 60 or so. This only seemed to make the bees much noisier, but that noise soon subsided, and when the cellar fell to its former temperature they were very quiet. The result seemed always good.

ONE of the largest apple-growers in Vermont told me a few years ago that he did not believe bees to be necessary in his orchards. Since

then foul brood has destroyed most of the bees near his orchards, and a neighbor told me recently that his apple crops have become very small. I am not surprised. Experience is a dear school, but there are some who will learn in no other way.

* * *

Mrs. Puerden makes a good point when she objects to honey being called a substitute for sugar. Rather should sugar be considered a substitute for honey.

* * *

Chas. A. Johnson's rule for sowing sweet clover on waste land is all right. He says, page 604, "First find limy land, and then ask the owner's permission to sow." Correct.

* * *

Friction-top cans make very cheap and convenient feeders, but rust out quite too soon to be profitable. I am coating new ones on the inside with linseed oil, which will protect them for a long time.

* * *

Says E. R. Root, page 590, that if there is anything he "absolutely knows," it is that windbreaks are a splendid investment, "an investment that will pay a big dividend year after year," and that "they are not only necessary during winter but also during fall and spring." I wish every young beekeeper in the land could be persuaded of its truthfulness and importance.

* * *

It would be well if those who prepare and furnish tables could study most carefully the table of classified food given on page 605 by Stancy Puerden. It would assist very greatly in giving a well-balanced ration, which is at the bottom of economy in the preparation of food. I have sat at tables where I found cheese, eggs, and meat at the same meal. Again, I have found sugar in various forms out of all proportion to other food, and so on.

* * *

A few evenings ago I received thru a friend a fine section of heather honey from Scotland. It is a beautiful amber, lighter than buckwheat, almost a wine color, with a very strong aroma, and very mild and pleasant to taste. This morning I went to the pantry to get it and found it gone. I inquired of the good wife what had become of it. She informed me that she had car-

SIFTINGS

J. E. Crane

ried it to the woodhouse, as it smelled so she could not stand it. It is easy to see why it has become such a favorite on the British Isles. A neighbor in-

forms me that some years ago he ascended one of the Scottish mountains during heather bloom and saw one of the most beautiful sights he had ever seen. The whole landscape was covered with heather bloom, and hill, valley, and mountainside were covered by it. It is not surprising that beekeepers prize it. Yet it may not yield better than those sections where alsike and white clover are abundant.

* * *

People long ago were condemned for not observing the signs of the times, and shall we beekeepers be so interested in our bees that we shall fail to observe the signs of the time in which we live—the most wonderful in the history of the world. King Alcohol is about to be dethroned and forever outlawed in our land. Militarism, another curse of all the ages, is likely soon to be brought under the domain of laws and justice. Little wonder if the earth seems a little greener, the sky a little bluer, and sunsets more beautiful than ever before.

* * *

I am rather surprised that in the quotations of comb honey very little attention appears to be given to the weight of sections. It is fancy and No. 1 and No. 2, apparently without much regard to weight of honey. When we are required to weigh every individual section and pack them in cases, some weighing 12 ounces, some 13, some 14, and some 15, these different weights should receive different prices. Thus a case of 15-ounce honey should sell for quite a little more than a case of 12-ounce honey, as it contains one and one-fourth times as much honey.

* * *

Williams Hugh tells us on page 614, October Gleanings, the more recent treatment for European foul brood: "First day—kill queen; same day, order Italian queen from queen-breeder, to be mailed within 14 days; eighth day—destroy all queen cells; 21st day or later—introduce Italian queen, etc." There are some objections to this plan. Better not kill old queen, unless you are sure of getting a new one or can supply one yourself. One man that I know killed his black queens last year and then ordered others, but these did not get there soon enough to be of much use. I have ordered a good many dozen queens this year which breeders were unable to supply.

A FEW days ago a certain business man on boarding a train in the East noticed two soldiers just ahead of him. One was assisting and steadying the other, and the business man was a little afraid one of Uncle Sam's boys had been drinking something stronger than coffee while he was away from his cantonment on leave. When the soldier stumbled and nearly fell over the slight threshold of the car, the man was convinced that his surmise was right. The two soldiers found a seat and the traveler passed and glanced at them, and to his horror saw that the boy, for he was apparently under 21, had lost both his eyes. His comrade was bringing him home from "over there."

Death is usually alluded to as the "supreme sacrifice," but to me that blinded boy has made the supreme sacrifice. Never again can he see any of the beauty in this wonderful world of ours. The love in the eyes of his mother or sweetheart is but a memory to him. Just when he should be at the threshold of a useful life of great opportunities, he is thrust into a place of utter darkness to learn to live with an almost insurmountable physical handicap.

For years we have been reading of the great numbers of killed and maimed across the water. We have read of institutions where the blinded soldiers are taught useful occupations and we have been asked to contribute to their support. But this blinded soldier was one of our own American boys, and the business man who saw him was my husband. Our casualty lists are steadily growing, and gold stars are beginning to appear in the service flags of every locality. Our colleges are being turned into military schools, and even our 18-year-old boys are proud to be in their country's service.

A few days ago a father of a soldier at the front said to me, "Mrs. Puerden, this war is the greatest trouble that has ever come into the world." That father has since gone to the land where there is no more trouble, his death probably hastened by anxiety for his son in the trenches.

But while it is true that this war is the greatest tragedy of history, all of us can see bits of the silver lining to the great war cloud. The spirit of unselfishness and willingness to sacrifice is growing among all classes. Patriotism is so strong that even the most selfish dare not openly disregard a request of the Food Administration or the Fuel Administrator. Public opinion can be trusted to see that such requests as that for gasless Sundays are as implicitly obeyed as if they were laws. Business men show an

OUR FOOD PAGE

Stancy Puerden



inclination to forget competition in co-operation to win the war. The saloons must go and equal suffrage for women is sure to come in time, in spite

of the Senate. The world is learning that useful work of every sort is honorable, and that the measure of a man's success in life should be gauged by his service to humanity. We are all learning that those people across the water who do not speak our language are not "ignorant foreigners" but brave and wonderful people from whom we can learn much.

And instead of being known as the most extravagant and wasteful nation in the world it looks as if we were in a fair way to become known as a people who practice thrift in all ways without losing our reputation for generosity.

Perhaps the change in public sentiment in regard to thrift is nowhere more apparent than in the kitchen. All of us housekeepers have at times hesitated to speak to the "help," temporary or otherwise, about throwing leftovers into the garbage pail, for fear of gaining a reputation for being close. But now, unless your kitchen helper is densely ignorant, she cannot fail to have absorbed a little of the conservation spirit that is in the air. To illustrate my point I am going to tell you a story that will perhaps shock some fastidious soul. I had given a little dinner for our 18-year-old son, while he was still our boy and not Uncle Sam's, and for the main dish I provided baked chicken. Immediately after the dinner when I went out to the kitchen my Hungarian Lizzie showed me a platter of chicken bones and said, "I saved these, Mrs. Puerden, because there is still quite a bit of meat on them, and I felt sure you would not want them thrown out." Now, altho I always make soup from the bones from which I cut the meat for creamed or scalloped chicken, I had never before saved bones left on the plates. But I did a little swift mental work and made up my mind that Lizzie should not beat me on conservation, and so I said, "That is right, Lizzie. Cooking them over will sterilize them and they will make delicious soup with the addition of a few vegetables." And they did and, furthermore, we ate the soup and enjoyed it. I believe if any of us are inclined to be overfastidious, all we need to do is to read of some of the revolting things the starving people over in eastern Europe have been obliged to do to obtain food.

While I am on the subject of fastidious people, I find so many who think they cannot eat barley flour in any way. They don't like it, they cannot like it, and sometimes I think they are determined they won't like

it. Nearly 2,000 years ago Christ fed 5,000 people with five barley loaves and two fishes, and incidentally taught us our first lesson in food conservation when He directed His disciples to gather up the fragments that nothing be lost.

Honestly now, if you will give barley flour a fair trial I am sure you will learn to like it. I will admit that it is not at its best in yeast bread for the reason that it has not the keeping qualities of white wheat flour. For that reason it is better to buy your wheat flour and substitutes separately and do your own mixing. But barley flour is delicious in cakes, cookies, and drop cakes, especially when combined with honey. It is fitting that these two foods should be combined as they were known and appreciated thousands of years ago, both being mentioned in the first books of the Old Testament. I like to use sour milk and soda with barley flour, as the soda neutralizes the slight acid taste in the barley flour.

Another reason for the use of barley flour in cakes is that as white flour is milled at present, 90 per cent of the wheat berry being used, it is not as soft and will not make as tender a cake as barley flour.

Now that so much is written and taught on foods, we must be careful to mix plenty of common sense as well as wheat substitutes with our baking. For instance, today I noticed a recipe for "Everlasting Gingerbread." After reading over the recipe I decided the gingerbread was correctly named. It was made of cornmeal. Now cornmeal in its proper place is a wholesome and delicious food, but cornmeal in a gingerbread tastes like a respectable Johnnycake gone astray. There is no need of resorting to cornmeal for gingerbread, when delicious, soft ones may be made of barley flour.

Before I leave the subject of flours let me urge you again to avoid the use of cornflour. Personally I feel that bread made of part cornflour might be described as adulterated, as cornflour has not the tissue-building constituents of other flours. I most heartily endorse cornmeal, used in the proper place, but believe cornflour does not deserve the name of flour.

Sweets.

We are told that the proper place for sweets is at the end of a dinner. Perhaps that is why I am apt to get to the subject of honey near the end of my page—force of habit, you see. Have you noticed an article that has recently been going the rounds of the press, telling how to invert sugar to make it sweeter? It is done by heating it with a little water and a very little cream of tartar. If more people would keep bees they might be able to enjoy nature's invert sugar.

Here is a conundrum: Why does the average beekeeping gentleman grow stiff and haughty if you mention corn syrup? They are both good foods, but honey is a sweet and corn syrup is only a

near-sweet, as any cook can testify who has used them both in cooking and baking.

Please try the Honey Devil's Food recipe, made with barley flour, and see if anyone in your family can detect the barley flour in it. It is very good accompanied by the honey ice cream.

The potato rolls are exceptionally good and very easy to make. If you like your rolls sweet, by all means sweeten them with honey.

HONEY DEVIL'S FOOD.

1 cup honey	$\frac{1}{2}$ teaspoon salt
$\frac{1}{4}$ cup shortening	2 teaspoons baking powder
2 squares unsweetened chocolate	$1\frac{1}{4}$ cups sifted barley flour
1 egg	1 teaspoon vanilla
$\frac{1}{2}$ cup thick sour milk	$\frac{3}{4}$ cup chopped nuts
$\frac{3}{4}$ teaspoon soda	

Melt the shortening and blend with the honey, add the chocolate which has been melted over hot water and beat smooth; break in the egg and beat again. Add the sour milk a little at a time alternately with the flour in which the soda, salt, and baking powder have been sifted. Add nuts. Flavor with the vanilla, beat well and bake in a rather slow oven about forty minutes.

CHOCOLATE HONEY ICE CREAM.

3 cups milk	3 eggs
2 squares chocolate	$1\frac{1}{2}$ teaspoons vanilla
$1\frac{1}{2}$ cups honey	1 quart cream
	$\frac{1}{2}$ teaspoon salt

Make a boiled custard of the milk, melted chocolate, honey, eggs, salt, and vanilla, and when cool add the cream and freeze. For a plain ice cream, leave out the chocolate and add one teaspoon more vanilla, or flavor in any way preferred.

HONEY APPLE MARMALADE.

Tart apples	Stick cinnamon, if desired.
Honey	

Cook tart apples until tender and put through a colander. Weigh, and for every pound of apples add half a pound of honey. Cook until about as thick as cake batter, watching and stirring carefully to prevent burning, and put in jars or crocks without sealing. It should be carefully covered. In a few weeks it can be cut out. A little stick cinnamon may be added while cooking if the flavor is liked.

FIG TAPIOCA.

$\frac{1}{3}$ cup granulated tapioca	$\frac{1}{2}$ teaspoon salt
$\frac{1}{2}$ cup cold water	$\frac{1}{2}$ cup honey
2 cups boiling water	$\frac{1}{4}$ cup chopped figs or dates
	$\frac{1}{4}$ cup chopped nuts

Mix the tapioca and salt with the cold water, pour on the boiling water, and cook in a double boiler until transparent. Add the honey and figs and simmer 10 minutes. Add the nuts, chill, and serve.

APPLE PUDDING.

6 or 8 tart apples	$\frac{1}{2}$ cup rice flour
1 cup wheat flour	3 teaspoons baking powder
2 tablespoons shortening	milk
	$\frac{1}{2}$ teaspoon salt

Pare, core, and quarter the apples and put in a pudding dish. Sift the two kinds of
(Continued on page 695.)

WE had such a nice Fair — “we” meaning the exhibiting - honey producers of Tennessee, main liners, side liners, professionals, amateurs —

all there together—the lion right beside the lamb. The whole Agricultural Building won great praise for itself, and, as the admiring throngs sauntered down its goodly length, past fine fruits and fancy vegetables and famous grains, past demonstration booths and the really splendid line of community exhibits, they came at last to the end that was given over, entire, to the Apiary Section. All up against the glassed-in end the Apiary exhibits ranged, the light from the windows softened by white muslin—and it made a goodly sight indeed. The worst thing was the realization that there was practically no honey besides the exhibits! But it was a very nice Fair—on a painfully short crop. Red, white, and blue were the chief decorations, not only of our own section, but of the whole building, and, indeed, practically the entire Fair; yes, and probably of every fair in the country. What other colors could be used in these great times, so thrilling and inspiring and so deeply significant?

* * *

Armed with sugar certificates, we faced the anticipated fall feeding, and lo, there came a flow—a fall flow sufficient for our great need. Even the new little colonies, the 1918 increase, have most of them stored enough for winter, some of them even crowding their queens a bit; while those that may lack somewhat can quite surely be supplied from their more wealthy neighbors. Droughts are surely most distressing and disastrous affairs; yet, sometimes, after having done their worst with the midsummer and the late summer, leaving bees utterly comfortless and beekeepers almost without hope, they dissolve gracefully away into the most desirable of fall rains; and the smartweed comes, and the boneset and goldenrod, and a great profusion of tangled aster. Such was 1918 in middle Tennessee.

Bitterweed also has come; West Nashville is gay with it. The bees we left here under our own vine and fig tree are happily busy on it. I wonder if they really like it. Maybe they don't “like” any honey—merely eat to live. Anyway they are filling story-and-a-half hives. And are welcome to what they're storing. I've sampled it. And I eat for two reasons myself—one is to live, and there's another. The other makes me willing to leave bitterweed honey to the bees.

As to goldenrod, more than one beekeeper in this section has said he never saw bees working it. Mr. Buchanan says that of the two species most common here, one only is

Beekkeeping as a Side Line

Grace Allen

worked by the bees. That must be the one growing alongside the Mill Creek Valley Pike, then, the bees have enjoyed it so this fall—ten or a dozen on a

clump; more on the goldenrod, in fact, than on the aster right beside it.

* * *

When you moved your first bees, you were very, very, very careful, weren't you? Naturally. And the undertaking was a complete success, wasn't it? Of course. Then you did it again, still carefully, and again and again—always successfully and always with growing ease and confidence. You never became exactly careless—in fact, not at all careless. Just less anxious and fussy. And then—something happened? I thought so. Something often does—at about that point in one's career. Perhaps during the summer extra ventilation was given to one or two hives (one is enough) by the insertion of chips or small pieces of wood; and because the pieces were never very thick anyway, and they had been crushed down still smaller and sort of crumbled away, and the bees had camouflaged the crevices with propolis (which everybody pronounces as he pleases and most of them differently), because of these things and the additional fact of your being experienced instead of fussy, you noticed nothing of the extra space between hive-body and bottom-board. Then probably, when the wagon was about half loaded, the darkey was told to turn that particular hive from crosswise of the wagon to lengthwise. And then it happened. Right thru those exposed cracks. And it kept on happening. And one of you “hollered”—you or your husband or your wife or somebody—just plain “hollered.” And one of you, nimble with hammer and tacks, and very brave, added wire cloth unto wire cloth and all around the edges, and the other added smoke unto smoke and all around the edges. But it had happened. Like spoken words that can not be unsaid, so are bees that escape at night. They can not be returned to their hive. Neither does smoke prevail upon them, nor moral suasion influence them. They are out. The rest is up to you. If you have only one veil, you give it to your darkey. And go on loading. And take your medicine. Then, quite likely, when you start off, part of the loose bees get lost, while the rest quietly ride the outside of several wire cloths. By the time you reach your destination, they are meek, subdued little groups that cause no trouble at all. And you—if you are wise—go home wiser still, realizing that you have fared far better than you deserve.

* * *

We have all read almost interminable advice about what to do when bees swarm,

and what to do when they're storing honey—or when they're not storing at all; what course to pursue when foul brood comes with its ravages or winter with its chill. And we've been greatly benefited by this advice (sometimes followed, sometimes not), and we hope to read reams more. But who has told us what to do when the bees go flashing and humming right thru the heart of a perfect blue-and-gold day in autumn? That's just it—no one has. The subject has been utterly neglected. The Editor has written no editorial on the subject, nor has Dr. Miller given it one Straw or Dr. Phillips one bulletin. Therefore I rise to the emergency; and as there is the Demaree method of this and the Miller method of that and the Alexander method of something else, this shall be known (if you insist!) as the Allen method of beekeeping on a perfect day in autumn.

It is very simple. Open two or three hives—very leisurely. You will scarcely need veil or smoke, using such gentle courtesy. Perhaps you may choose to do this part of the operation with one of those quiet smiles invented by the first man who was content to do simple deeds and think wide thoughts. Or you may prefer a broad smile of conscious appreciation. Or the low slow smooth whistling of a slow old tune. Don't hesitate to use any of these aids, just because they are old. Modern beekeeping has developed no improvements. You will quite surely require something of the sort. The hive-tool alone is not enough.

Now there are two things to do while the hive is open, yea, even three. First, notice how nicely the honey is coming in. Second—and be sure not to hurry this too much—watch the bees. And while watching them, listen to them, feel the content of them, and wonder about them—especially, wonder about them. And about other things too. Third, notice the day itself, the utter, utter beauty of it. Take plenty of time. Look often a long way off—and a long way up. Then very gently close the hive and sit quietly down where you are. And give up—for an hour, or two, or three. Yield yourself absolutely to the spell of the day. And it will yield to you in return things not to be bought or sold or even stolen away, things listed in no market report, because they become at once part and parcel of your very self. As these old deathless moods, given so freely to all God's listening children, come to you, it will feel as tho part of yourself were coming home. Not until later, when you have folded them away in a precious memory, will you give them names. Then you will call them Imagination, Exultation, Content, Wonder, Reverence, Aspiration, Peace.

* * *

Dr. Phillips says that all bee work should be for one of two purposes: to get plenty of bees (of the right age) at the right time for the honey flow, or to keep those bees in the

right condition to gather the crop. "Help-meet" says that they studied out the work to be done and were able to divide it into three classes—work having to do with stores, with room, and with protection. So they could plan with much skill and wisdom. In reading accounts of the systems of management of successful honey-producers, while the reader may be impressed that these systems differ one from the other, he is still more forcibly impressed with the realization that each one has a system, a real, definite system, and follows it. Side liners are only too apt, even when they do good work, to do it in a haphazard way. Good management and efficiency require a regular schedule, elastic, of course, and subject to variations of seasonable conditions, but a clean-cut schedule, with definite objects in view and sound reasons for its every step—not one unnecessary step taken, not one important one omitted.

Let us set about to raise the standard of our own work, each one of us—not critical of others and complacent with ourselves, but rather critical of ourselves and helpful, if may be, to others.

LATE SEPTEMBER.

The glow of that September day
Was so berimmed with color round—
So Orientally it lay
Along the sky and leaves and ground,
Each weed and wild thing seemed inwove
Across the riotous design
Of some old weaver, who had throve
Forever upon wizard wine.
And all the spell of ancient things
He wove around that dreaming day—
The spell of song and bloom and wings
That drifted their enchanted way.

The boneset raised her magic tents
Of living whiteness on the green,
Where asters in gay tournaments
Were massed and tangled in between;
The Spanish needle sheathed her lances
In her satin's glossy fold,
And mingled in the merry dances
Mad as ever minstrel told;
The ironweed waved her purple high,
But tho most flauntingly she trod,
The wizard weaver passed her by
And laid a crown on goldenrod.

And in that spell I laid me down
Upon the strangely gleaming grass,
And let earth's beauty slowly drown
The little moods that rise and pass.
I laid me down beside my bees,
And all the charm of sun and flowers
Became a voice like far-off seas,
Or murmurous music; and the hours
Grew green and still and full of balm—
And something shimmered o'er the field
As, white and tall and very calm,
The soul of beauty stood revealed.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California— In our October correspondence I intimated that early rains might set in at any time and cautioned beekeepers not to extract too closely this fall. As a matter of fact, there were intermittent rains thruout September, and our fall flow has been very considerably decreased. Jackass clover, alkali weed, and bluecurls were in excellent shape and it appeared that they would yield their normal surplus. Many beekeepers, especially in view of the fact that alfalfa had yielded so poorly, moved their bees so as to take advantage of the above-mentioned bloom. The continual rains, however, cut short the flow and the surplus realized was but half what was expected. The fall bloom yielded best in Kings, Tulare, Fresno, and Merced Counties. Jackass clover has lived up to its reputation as a honey plant, and yielded heavily until the rains came. The honeydew along the rivers in central California is practically a total failure. Reports indicate that there has been but one-tenth of a normal flow from this source. It has been several years now since this aphid honey, often termed "bug - juice," "black - strap," "black-jack," and "wild rose," has produced a full crop. It is regrettable that so little of this honey has been produced, since the demand for this grade by bakers and confectioners has been out of all proportion to the supply. The honey crop for northern California is perhaps only 60 per cent of an average crop. In the northern section of our district the yield has been poor. The ravages of disease had every bit as much to do with the short crop from Sacramento north as had the poor flow.

Honey prices continue firm and the movement of the product is commensurate with market demands. During the past few weeks the California Honey Producers' Co-operative Exchange has sold, net to them, several thousand cases of honey at prices ranging from 22 cents per pound for amber to 24½ cents per pound for white. The Exchange has still many carloads of honey which undoubtedly will be disposed of within the next month or two according to market demands. The bee-supply needs of more than 700 members of the Exchange are now being handled by the supply department and all members who have not already sent in their requirements, or who do not fill out the requisitions now being sent them, will not receive the full benefits of the reduced prices now available to the Exchange. Prices of practically all bee-supply materials are continually advancing, and it would be poor policy on the part of the beekeepers to unnecessarily delay in sending in their requirements. The Exchange has committees working on the standardization of bee supplies and honey, and also on bee-disease

legislation. These three important matters which concern our industry so vitally will be taken up in a most thoro-going manner. The Exchange realizes fully the importance of this work and is making every endeavor to put forth the proper standards for bee supplies and for the grading of honey.

The bee-disease situation is lamentable, and there is not a beekeeper in California today that will not welcome a change in our present law, which is neither checking nor helping us to eradicate our brood diseases. The Exchange will have a representative present at Sacramento when our legislature convenes this winter. The representative will be in a position to set forth concisely the needs of our industry relative to State protection.

Modesto, Calif.

M. C. Richter.

* * *

In Southern California— Honey prices are firm and the demand is strong. In fact, so little honey is offered for sale in these sections that wherever a few cases are reported, several buyers are immediately out after it. Twenty-one and a half cents per pound or more is offered for light amber, and for strictly white orange or sage honey as high as 24 cents. Only a few producers are anxious to sell at these prices. The high price of honey has made the demand for bees very active, and many persons having little or no knowledge of the business are buying. Late honey plants have not been in prime condition, and, consequently, the bees have not filled up as well for winter as they usually do. Many colonies are very short of stores and will have to be fed in order to get them in proper condition for winter. This is especially the case where the apiary has been run for extracted honey. Brood-rearing has kept up well in most cases, and with sufficient feed the colonies should go into winter with plenty of young bees. Contrary to the opinion of many beekeepers, I believe that plenty of young bees in the fall is a great asset for strong colonies in the spring. This is the case in sunny southern California as well as in colder parts of the country.

With over 100,000 colonies signed up with the State Beekeepers' Exchange, the advantages to be obtained by co-operative buying can easily be seen. In the selling of our products, it is reasonable to suppose that we will be able to sell our honey for as much as the commission men can sell it. If we as an organization can handle the crop out of which dozens of brokers have been making money, we feel that we can save some money for the producer and at the same time get the honey to the consumer just as cheap as he gets it now. Of course, there are some who will not join the Exchange. There never was a movement for the bene-



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fit of any class of producers but that some one was ready to criticize and knock the efforts of those who were working for the success of the enterprise. Some will stay out, thinking that they may possibly get a little more for their honey on account of the united efforts of those who are in the organization, making it harder for the independent buyers to get small lots of honey. California has been the leader in co-operative marketing and has a man as State Market Commissioner second to none in the country. Under his wise leadership, numerous groups of producers have been united by the exchange method, with very great benefit to the members. The beekeepers will likewise be benefited by their exchange.

A few beemen report good yields of honey from the lima bean fields. Others get no surplus at all. This variety of beans is grown along the coast, as we say in southern California, that is, within a few miles of the ocean. There they get the benefit of the heavy fogs that often roll in, night after night, so thick that it gives the country the appearance of having had a light rain. Roofs, trees, and vegetation are often dripping wet for hours. The honey from the lima bean is very thin, and some old-time producers leave it on the hives until winter or even until the next spring. Early extracting has often resulted in sour honey, and experienced buyers are very slow about purchasing bean honey, altho it is of a beautiful white color and has quite a mild flavor.

Considerable rain has fallen over the State during the past two weeks, some sections getting a downpour almost in the nature of a cloudburst, while others got almost none at all. Altho it is too late to make any difference in this season's honey crop, all rain from now on will help toward a crop for the season of 1919. From my experience of about 23 years in southern California, I am convinced that the best assurance of a good honey crop from our dry sage-covered hills and valleys is an abundance of rainfall before the Christmas holidays. As the days grow shorter and the nights grow longer, the moisture seems to penetrate deeper and deeper into the soil. Evaporation is not so great as during the spring when the sun is hot and days are longer and all vegetation is growing luxuriantly. If the roots get well soaked in the fall, it is a double assurance of a crop if followed by copious spring rains.

Corona, Calif.

L. L. Andrews.

* * *

In Iowa—The honey crop in Iowa was about as complete a failure as it could be. A little fall honey, stored after Sept. 1, was all I secured. A number of beekeepers are already looking around for new locations. The secretary of the Iowa association is being importuned to cite good

locations for honey crops. The present locations have furnished crops in the past, and unless forage conditions have changed we cannot see why the old locations might not return to their old-time productiveness.

Well-filled sections of honey are retailing all over Iowa at not less than 35 cents per section (not pound), and extracted put up in pint Mason jars at from 50 to 60 cents per jar. Hold steady now and don't get excited. The beekeeper is beginning to come into his own. These prices need not recede very much for a long time to come. It is actually much easier to sell a 35-cent section of honey now than it was to sell a 20-cent one. It is as Mr. John Egenes of Renwick, Iowa, wrote me, "I find it is not what you will take for your honey. It is what you ask for it."

Every beekeeper in Iowa will be neglecting his duty this year if he fails to attend the annual meeting of the Iowa Beekeepers' Association Nov. 6 and 7, at Des Moines. Nearly every other line of business, including the farmers, hog-breeders, cattle-breeders, fruit-growers, etc., have their association meetings and short courses. Why not the honey-producers get together as a business proposition? If you never have attended one of the annual meetings of the Iowa beekeepers, do so this time. It will surely prove a real tonic for you in your bee work, if not a thoro cleanup of your beekeeping system. Apiculture in Iowa is making steady progress. Many who have always been careless with their bee work are now standardizing their equipment, even tho they do not possess more than a few colonies. The person who keeps two or three colonies in first-class condition and gets full results is just as good an apiarist as the one who keeps more bees and takes no better care of them. If you do not respect the rights of others enough to keep your bees in a healthy and prosperous condition, you are fast becoming a real menace to every other apiarist and should at once quit the business, whether you possess one or one hundred colonies. Our State laws do not allow diseased horses, cattle, hogs, or sheep, to be kept on any man's place. Then why should a slothful, don't-care beekeeper have any more privileges than is accorded the other fellow, and thus be permitted to become a nuisance to his neighbors? If this hits you, "cut it out," for the Iowa Beekeepers' Association is going after and intends to take the last line of trenches of this bee-disease business. If you don't want to fight in the open, you had better make an unconditional surrender.

State Apiarist F. Eric Millen a few days ago said our State association program for Nov. 6 and 7 is going to be most excellent and instructive. "This year more than ever before, all beekeepers are urged to attend, regardless of whether you are a mem-



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ber or not." The program will be strong and practical. Among those who are expected to address the sessions are Morley Pettit, of Ontario; L. C. Dadant and Frank C. Pellett of Hamilton, Ill.; E. R. Root, editor of *Gleanings*, Medina, O.; Dr. E. F. Phillips of Washington; also prominent beemen of Iowa, including a good representation from the Ames Agricultural College Experiment station.

Hamlin Miller.

Marshalltown, Ia.

* * *

In Minnesota—At the request of the sugar representative of the Federal Food Administration for Minnesota a conference was held at his office on Sept. 25 to further consider the matter of supplying sugar for the fall feeding of bees. The representative desires to aid the beekeepers in every possible way, and he is anxious that no bees perish for the lack of food. However, in line with the Government's policy of conservation it would seem better not to allow more sugar for the fall feeding than is actually necessary to carry the colony safely thru the winter. More can be secured in the spring if necessary. In making application the beekeeper now states the total number of colonies in his apiary and the number which need to be fed. In most cases these are O. K.'d either by the person in charge of the Bee Culture Division of the State University or by the State Inspector. Not more than 15 pounds are allowed for each colony needing stores. An additional 10 pounds may be secured in the spring if needed. In order to avoid all confusion for the coming year, it was suggested and approved by the conference that it would be a good thing if some plan could be worked out so that a special application form could be provided somewhat along the line of the one used by the Ontario beekeepers in their applications to the Canada Food Board. The form is too long for insertion here, but it is sufficient to state that after the application has been filled out there can be little doubt as to the actual needs of the applicant.

The annual meeting of the Minnesota Beekeepers' Association will be held during the first week in December in connection with the annual meeting of the State Horticultural Society. The Association has increased in membership during the last few years, but there ought to be several times as many members. This organization has been a great help to the industry in the State, and every beekeeper ought to give it his hearty support. Program of the annual meeting and other information concerning the Association can be secured from the secretary, L. V. France, University Farm, St. Paul. The small sum of one dollar makes you a member of the State Association, of your County Association, and of the State

Horticultural Society. Besides, for this same dollar you receive monthly the *Minnesota Horticulturist* and a bound copy of the magazine at the end of the year. Also in addition to the above, you are entitled to plant premiums from the Horticultural Society, which alone are worth the dollar. Mr. Beekeeper, you can't afford to stay out. Come in and help boost.

Minneapolis, Minn.

Chas. D. Blaker.

* * *

In Michigan—Bees are going into winter quarters in the best of condition. Brood-rearing has continued later than in years past and this insures a very large number of young bees. Good stores for winter have been provided either in the form of honey or sugar syrup. To date permits for the purchase of about 85,000 pounds of sugar have been issued. The bulk of this sugar has gone to beekeepers in the districts where honeydew was stored in quantities and to the parts of the State where the severe drought and unfavorable weather prevented the storing of the usual amount of fall honey. Unprecedented interest in packing cases and in cellar wintering is being manifested in all counties in the central and southern part of the State. It is evident that beekeepers are making special efforts this year to avoid the loss and disappointments of last winter. The serious loss of last year was a hard lesson, but the moral of it has been well learned. The outlook for next year is excellent.

Excepting such honey as is being held for home trade, the Michigan honey crop in general has passed from the hands of the producers. The prices realized have been very satisfactory. As a result of the prosperous condition of the industry, bees are in considerable demand at this time, and this demand will continue up to the honey flow next season. Beekeepers who are planning on purchasing combless packages should at once get in touch with the producers and, as soon as possible, get orders accepted for spring delivery. The demand for combless packages for Michigan will be tremendous, and those who wait may not obtain bees in time to be profitable next year.

One very encouraging thing noted this fall is the zeal of the better producers for buying the unproductive bees of their communities. Practically all of the better beekeepers are planning on increasing their number of colonies considerably before the next honey flow.

The annual meeting of the State Beekeepers' Association, which will be held at Lansing on Nov. 19-21, promises to be one of the best of good times and one of the most profitable meetings of Michigan beekeepers in recent years. The present indications are that all the previous records of



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attendance will be broken. Practically all the county associations will send delegations of considerable numbers. This will be one of the rare opportunities to talk with some of the most successful men in the industry and to learn many of their methods which make them so successful. The discussions appearing on the program will center around the subjects of the proper size of hives for best results, the use of combless packages, modern methods of marketing, with special reference to the possibilities of a producers' co-operative organization, and the honey-producing possibilities of the Upper Peninsula. The most of the program will be in the hands of Michigan men. E. R. Root of Gleanings and C. P. Dadant of the American Bee Journal have consented to be present and give Michigan beekeepers the benefit of their broad and very valuable experience. A banquet will be held on the evening of Nov. 20. Plan to side-track everything else and join with your fellow producers in a most enjoyable and profitable time. If you have not received a program write to the undersigned.

East Lansing, Mich. B. F. Kindig.

* * *

In Ontario—

Following a very fine warm August which gave a nice surplus from buckwheat, we in Ontario have had a September unusually cold and wet. With a large number of surplus combs to look after, it has been my practice to leave combs on hives till about Sept. 7, as after that date combs are safe from any damage by moths. I delayed starting to take off buckwheat honey this year till that date, and thereby hangs a tale. Weather turned cold and wet, and in three weeks I had but five days in which I could extract honey, and some of those days were only half days so far as bee work was concerned. The result is that at this date (Oct. 7) I still have about 4,000 pounds of buckwheat on hives, and nearly that much more is piled up in supers in a kitchen at home, having been drawn eight miles from an outyard. While it was too cold to extract the honey, yet as the yard was well sheltered I was able to get honey from bees. This season the man who operates from a central base, using escapes to clear supers, and who draws all honey home for extracting, scores without a doubt. However, even if I did get caught this year by unusual weather conditions, have no idea that I would prefer the plan of always drawing the honey home to extract. "Many men of many minds"—that is the only way to explain the different preferences, or shall we call them prejudices in some cases?

I think it was the late J. B. Hall, well known as one of Ontario's best beekeepers, who often said that the most prolific queens and the most populous colonies did not nec-

essarily mean the greatest honey-producers. While I think that in the great majority of cases the largest colonies do store the most honey, yet, without a doubt, there are exceptions. While clipping last spring at one of the yards where the bees are all in 10-frame L. hives, I came across one of the most populous colonies for the time of the year that I have ever seen. Altho it was only about the middle of May, the hive was boiling over with bees, and every comb about full of brood. In fact nine of the combs were literally solid with brood, and there was not more than a pound or so of honey in the hive. As the hive had been marked H last fall, that meant that it was very heavy with stores and its present condition signified that the bees had used these stores in early brood-rearing. This yard was affected with European foul brood, but the colony in question showed not a cell all thru the season. Naturally I expected great things from such a good showing in spring; but, while the colony stored a lot of honey, yet many others not nearly so populous have stored a great deal more. At present, the colony is extremely populous, and the condition, so far as brood-nest is concerned, shows that the queen has occupied about all of the 10-frame brood-nest thruout the season. Buckwheat supers were taken off on Oct. 4, and on examining the brood-nest I found that there was not a pound of honey in the hive, only a few unsealed cells being in each outside comb, and quite a lot of brood present at this late date. With 70 colonies in the yard, 40 are marked heavy enough for winter, and the remainder need but from 10 to 15 pounds more stores each, while this single colony has not a pound. Evidently this is a case where too much of the colony's energy is given up to brood-rearing, and the bees, altho in great numbers all the time, for some reason are not as good honey-gatherers as many others in colonies not so prolific.

Bad weather, as already intimated, has delayed bee work very much. While in many cases not much feeding is necessary, yet what is to be done has been held back very much by the cool weather. Even strong colonies would not leave the cluster to take feed from a Miller feeder, and the pails had to be used instead. After all is said and done, is there any feeder just quite so handy and ready for any time as the inverted honey pail with perforated lids. While the wet weather has been bad for bee work, clover, on the other hand, has done magnificently, and fields are now in great shape to go into winter, as so much moisture has made a great growth. Mention was made, in a late issue of Gleanings, of the big yield of alsike this season and good prices prevailing. Since that was written, alsike prices have made a great advance, and I am informed that a



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farmer near us received the record price of \$17.00 a bushel a few days ago. Naturally this means that wherever a field of alsike has been sown, it will be left for seed if the stand is at all good.

Some two months or more ago, I announced in this Department that a successor to Mr. Pettit as Provisional Apiarist had about been chosen. Prof. Gates of Amherst, Mass., was the man I had in mind, but my informant had asked me not to mention the matter as things had not been definitely arranged. As already announced, Prof. Gates has taken up the reins of office at Guelph, and personally I wish to take this opportunity of welcoming him among us. While we have met Mr. Gates only once, yet at various times we have had correspondence, and I feel sure that he will be given a hearty welcome by Canadian beekeepers. No doubt Prof. Gates will attend our coming convention and will have an opportunity of meeting and getting acquainted with many of the fraternity from Ontario and other parts of Canada. That his stay with us may be long and his labors successful is the wish of all of us who are interested in the business of beekeeping.

Markham, Ont.

J. L. Byer.

* * *

In Texas—During the last month conditions over the State have improved very materially. Rains in many localities have greatly changed prospects, and if early frosts do not occur the bees will be in good shape for the winter. Generally the bees now are in better condition than they were a year ago at this time. In the Rio Grande Valley a light summer flow has resulted in the hives now being full of bees with plenty of winter stores. In the Gulf Coast section the bees now are 75 per cent better than last year at this time. In the southwestern territory the poorest conditions prevail of any place in the State, but very recent rains will improve conditions here wonderfully. Bees responded very readily and brood was being raised in great quantity wherever rains had brought out any bloom. A late frost will allow great improvement in this territory. In west Texas the bees are in better shape now than a year ago, but the drouth has not been broken as it has in the other sections. In east Texas the bees are in better condition for the winter; the colonies are stronger and with more stores. In central Texas the conditions vary greatly with localities. In the southern portion the drouth still prevails and bees are not in as good condition as last year. In a few favored localities there is an improvement over last year. Thruout the northern part of the State the bees are now in better condition than a year ago. Of course, the condition of the bees is

entirely dependent upon the plant conditions. In the Valley there was a good flow and the plants were recovering from the drouth. In the Gulf Coast section the recent heavy rains caused some of the spring flora to bloom and bees built up rapidly, even draining comb from foundation on Oct. 1. Bees will go into the winter with good stores and plenty of young bees. In the southmost sections the fall bloom has caused so much brood-rearing that considerable increase is being made. In west Texas those bees that have been allowed their stores will go into the winter in good condition. In the eastern section the fall flow was good and ample stores for winter were assured. In the central section some bees were not able to store any from a fall flow and so will start the winter short on stores. In the north section the bees will go into the winter with sufficient stores.

I often wonder after another year of adverse conditions what proportion of bees exist as compared with a year ago. In the valley section there is a slight increase, the losses having already been made good by dividing. In the coast section there are now only 60 per cent as many bees as last year and only 50 per cent as many as two years ago at this time. In the southwest section there are now only 50 per cent as many bees as there were two years ago. The loss this summer was about one-fourth of the total. The shortage is not much in the western section, perhaps 10 per cent due to general carelessness. In some localities of the eastern section there are now not over 60 per cent the bees that there were last year. In other localities there has been no loss. In the central section the loss during the past summer has not been over 5 per cent, but the number of colonies now as compared to two years ago is about 70 per cent. Thruout the northern section there has been almost no loss.

Feeding bees was such a common practice last year that many beekeepers expected to feed again this year. The general rains resulting in good fall flows over most of the State has changed these feeding expectations. There will be some feeding in the southwest section. In some localities feeding has been done for some time and will cease now. In some localities in the central section there will be some feeding.

The increase that is being made in some localities has disclosed a shortage of queens at this time of the year. Practically no queens are available in this State.

The pound-package trade for this State for next year is very uncertain. One owner has sold his entire supply in three large orders. Many who have had bees to sell in the past will need all they can supply for increase at home. Having lost faith with the old transportation facilities, it will be



FROM NORTH, EAST, WEST AND SOUTH



some time before the shippers attempt the new methods of mail shipments.

College Station, Tex. F. B. Paddock.

* * *

In Florida—The question of using sugar for winter stores in place of honey is definitely settled by Dr. Phillips in the circular letter to the Honey Crop Reporters, sent from the Bureau of Entomology on Sept 12. As some of the Florida beemen who were considering extracting their fall crops may not have received this letter, the following quotation will apply to them: "It should be pointed out that any beekeeper who removes his honey to sell at a high price, and then asks the Food Administration to furnish him with sugar at a lower price for his bees, is taking advantage of the war conditions for his own gain, and this is profiteering. * * *

In no case should a beekeeper ask for sugar for feeding the bees unless he actually must have it. The conditions under which sugar-feeding seems legitimate are when there has been a failure of the honey crop. * * *

There has been no failure of the Florida honey crop this year, and there is no excuse for sugar-feeding. A few beginners—and there is an unprecedented number of them this year—will undoubtedly strip their bees too closely and have to resort to feeding, and it seems the duty of the specialist to warn them all in time, and, if they do not take the warning, to insist that they feed honey and not sugar. Also there are a great many who have started with late swarms and with bees from trees, and these must

have sugar to carry them thru. The Food Administration has supplied me with application blanks, which I shall be glad to forward to those who need them.

During a year's correspondence with beekeepers in different parts of the State, the ignorance of practically all of them as to the sources of nectar has constantly been demonstrated. A few of the most important honey plants are well known; but there are scores of others that do not possess even local names. It is humiliating to confess that beekeepers know so little about the plant life on which they depend for their living, and I wonder if Gleanings can not, with the co-operation of the beekeepers of the State, do something to enable us to identify our honey flora. I would suggest that during 1919 the beemen secure photographs of the various honey plants in their immediate localities, giving local names, time of blooming, and other data. These could then be classified and properly named by some competent botanist and published in book form. The price of such a book would, of course, be high; but we are used to high prices in Florida, and most of us would be glad of the opportunity to secure the information. [Gleanings certainly is ready to co-operate in every way possible. Call on us.—Editor.]

One other need is a bee book for beginners, written with especial reference to conditions in the South. There is none such at present and the time may now have come when such a book might pay the publisher. Apopka, Fla. Harry Hewitt.



Harry Hewitt, who writes for Florida beekeepers in Gleanings—and is a most excellent beekeeper.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Three Reasons for Cellar Wintering.

In the long experience I have had, 68 years, and having bees every year, I hardly know where to start with the story you ask. However, I will say at the present time it seems that the most of beekeepers are wondering how they can winter their bees most successfully. I have for several years wintered in my cellar, the past winter putting my bees in on Nov. 2, 1910

quickly and was ready to go out. So I took eight frames of brood from her and made four nuclei and gave a super, and in a short time I saw they were ready to go again. Then I took four more frames of brood and gave two supers. They were soon full of clover honey and were building queen-cells again. I took four more frames and gave two more supers. I have now taken off five supers and have 140 sections, 137 being salable. Is this good or not? She is only a dollar queen.

Chatham, N. Y.

P. L. Callender.



D. W. Trescott calls this the model apiary.

colonies, taking them out Apr. 20 and 22. My loss was two colonies that were queenless.

My cellar has a cement bottom and is dry. However, there is a cistern in the cellar. It is perfectly dark, windows covered outside and inside, the temperature from 40 to 55, with upward ventilation. The hives are placed on their bottom-boards, entrances all open, covers all off with burlap over the hives, and I set them six inches from the cellar bottom, putting three and four colonies high. I see that my bees have plenty of stores, and find that nearly one-third less honey will winter them. In August I make sure that all colonies have laying queens and have young bees to winter. I watch carefully the condition of the season. At times I have put them in earlier than last year and have taken them out as soon as settled weather. I have wintered all ways imaginable and find the safest and most profitable in cellar wintering. This is because: (1) they use less stores; (2) the hives are kept dry, and not being subjected to wet and dry conditions last many years longer; (3) there is no loss of bees on warm days by flights.

Conesus, N. Y.

D. W. Trescott.

A Queen's Big Record.

On page 556 of your September issue Mr. A. S. Schreckengost of Kittanning, Pa., says he has a golden queen that he values at \$50 for giving him 144 sections. Now, if his queen is worth \$50, what is this one worth? We lost most of our bees last winter, but this queen came thru in fine condition and built up very

Winters Successfully in an Easy Way.

In the September number of Gleanings I told of wintering 84 colonies outdoors last winter without the loss of a single colony, and also of wintering 117 colonies in the winter of 1916-17 without loss. The Editor of Gleanings has asked me to tell more at length as to how I prepare my colonies for winter.

In reply to this letter of inquiry as to my method of wintering outdoors, I will say that I winter in eight- and ten-frame hives, L. frame, set facing south and set a little up from the ground. I have boxes to give six-inch space all around the sides as well as front; some without bottoms, some with bottoms. I place the hive in the box, or slip the box down over hive that has no bottom, and give an entrance of $\frac{1}{2}$ by 3 inches. I pack well with clover chaff or forest leaves flush up to the top of the hive. I then put on a honey-board, with cleat side down; lay



C. O. Yost, of the State Entomologist Office of Indiana, says this field of white sweet clover, Jefferson County, Ind., upon a high bluff above the Ohio river, is the best he has ever seen. Mr. Yost, 6 ft. 1 in. tall, is shown holding his hat above the clover growth—which shows its remarkable height. An apiary is near by.

HEADS OF GRAIN

FROM

DIFFERENT FIELDS



An apiary of L. L. Andrews (Gleanings correspondent from southern California), located a half mile from the orange groves at Corona, Calif. There were 200 colonies at the beginning of the orange flow. At the close of this flow, the apiary had increased to 300 colonies and had produced 80 pounds of orange honey per colony. This apiary is moved from one locality to another to secure various honey flows.

a strip $\frac{3}{8}$ by $\frac{7}{8}$ across the center of the little bee-escape slot out flush to the outside of the hive; or do the same with burlap sack with just as good results. Then I fill large sacks to completely fill the box with dry forest leaves; or, just as good, use clover chaff. I cover so as to keep out snow or rain, and with plenty of stores I seldom lose a single colony.

Yes, we usually have plenty of snow thru-out the coldest winter. Sometimes the hives

are completely snowed under. Then I shovel down to the top of the box to give air so as not to gather dampness. I sell hundreds of swarms in the spring. I never find any combs moldy wintered in this way. I never use windbreaks, but my apiary is located in an orchard. However, I would advise windbreaks in some localities not protected by woods.

A. H. Guernsey.

Ionia, Mich.

Successful Wintering Easily Accomplished.

While this is only my third year in the bee business, I wintered all of my 15 colonies last winter successfully when almost all the bees of my neighbors died, due to the exceedingly severe winter. I therefore think I have the correct wintering scheme. In fact, I have never lost a colony so far, altho I don't want to brag. I winter outside. My wintering plan is according to A B C and X Y Z of Bee Culture. First of all, I have young queens to make strong colonies in the fall. I give plenty of stores, and winter in Buckeye double-walled hives, with leaves on three sides and on top, all covered with tar paper. In this shape they stand long periods of confinement.

The results simply show the difference in having protection, and using double-walled hives.

Harry E. Germond.

Rhinebeck, N. Y.



THE BACKLOT BUZZER.

Ma says that's jes like ye, tryin' to make a strategic retreat under a smoke screen, when I ought to have used poisoned gas.

OWING to the prevalence of Spanish influenza, the convention of the Western New York Honey Producers' Association to have been held Nov. 1 and 2, at Genesee Hotel, Buffalo, N. Y., has been indefinitely postponed, and notices to that effect were sent out on Oct. 14. The convention will be held later when health conditions permit. Howard M. Myers of Ransomville, N. Y., is secretary of this much-alive organization.



Editors

at Madison, State Capitol, in the Senate Chamber, on Dec. 5 and 6, 1918. Wisconsin beekeepers who are not members of the State Association

or of a local association not affiliated with the State Association, will not receive programs except on request made to the secretary. Edward Hassinger, Jr., R. F. D. No. 4, Hortonville, Wis., is secretary of the State Association.

* * *

The Chicago-Northwestern Beekeepers' Association will hold its annual convention at the Great Northern Hotel, Chicago, on Dec. 10 and 11. Write John C. Bull, Valparaiso, Ind., for program.

* * *

The annual meeting of the Michigan State Beekeepers' Association is scheduled for Nov. 19 to 21 at Lansing, Mich. It is expected that the attendance will be the largest in years, and the interest shown will be of the liveliest kind.

* * *

The annual meeting of the Lenawee County Beekeepers' Association will be held at the apiary of A. E. Mosher, near the Industrial Home, Adrian, Mich., on Thursday, Nov. 14, at 1 o'clock. B. F. Kindig, State Inspector, will be present.

* * *

The St. Clair County Beekeepers' Association was recently organized at a meeting held at Port Huron, Mich. The new organization starts with a membership of 30 beekeepers. Very great enthusiasm and interest are shown in the new organization.

* * *

The Illinois State Beekeepers' annual meeting, which was to have been held at Springfield on Nov. 8 and 9, has been indefinitely postponed on account of the influenza epidemic. Mrs. Jas. Stone, the wife of the secretary of the State Association, was one of the victims of the epidemic, her death occurring Oct. 17.

* * *

The Los Angeles Times of date of Sept. 29, quoted the resolutions adopted by the Southern California Beekeepers' Association as follows: "That it is the sense of this meeting that we express ourselves satisfied with the present management and plan of work of the Southern California Beekeepers' Association and thoroly oppose any consolidation or union with the State Co-operative Honey Producers' Exchange, and that we affirm we are not now or ever have been affiliated in any way with the exchange."

* * *

The annual convention of the Wisconsin State Beekeepers' Association will be held

The Division of Extension in Agriculture, University of California, in co-operation with the Extension Service, United States Department of Agriculture, will this year inaugurate a series of short courses in apiculture. These will be given as follows: At San Diego, Nov. 25 to Nov. 30; at Davis, Dec. 2 to Dec. 7; at Visalia, Dec. 9 to Dec. 14; at Riverside, Dec. 16 to Dec. 21. The purpose of these short courses is to afford experienced beekeepers an opportunity to become acquainted with the most successful methods in practice among their fellow craftsmen, and to offer to those of limited experience and the student contemplating beekeeping as a business a series of intensive training. Among the instructors at these short courses will be: Dr. E. F. Phillips and George S. Demuth, of the Apicultural Division, U. S. Bureau of Entomology, Washington, D. C.; Geo. A. Coleman, Apiculturist of the University of California; M. H. Mendelson, one of California's most experienced and most successful beekeepers; E. R. Root, editor of *Gleanings in Bee Culture*; F. C. Pellett, assistant editor of the *American Bee Journal*. This corps of instructors will be assisted in each course by one or more practical beekeepers, who will give demonstrations of methods which they have found practical under their local conditions. Practical demonstrations will be given of the handling of bees and the diagnosis of diseases. There will also be visits to apiaries. A short time will be set aside each day for the discussion of problems of general interest in which all members of the class are invited to take part. Mr. Coleman, who will be in charge of these courses, will have office hours each day. Any one desiring special information or having special problems should see him. He will also be glad to arrange with students for a conference with any instructor. Samples of all the apparatus and tools necessary in modern beekeeping will be on hand for use in demonstration by the instructors and for study by the members of the class. Any person interested should write to Geo. A. Coleman, University of California, Berkeley, Calif., for the program of these beekeeping short courses to be given next month, and for application form.

QUESTIONS.

—(1) What do you think of the plan of having two queens in one hive, in order to have a large force for a future honey flow? I tried this with two new swarms. The

two colonies were separated by a queen-excluder, and each colony was supplied with its own queen. The lower colony contained full combs and some stores. One of the colonies raised 14 and the other 15 frames of brood, and then I took one queen away from each colony and raised all the sealed brood above, while the queen and the unsealed brood were placed below. These swarms were monsters. (2) Some beekeepers contend that sugar syrup fed exclusively to bees when there is no honey in the hive will often cause the queen to be killed. Last winter I knew of quite a number who fed sugar from July until Apr. 1, and there was absolutely no honey coming in, yet none of the queens were lost. I want to know what your experience has been along this line.

W. T. Rabb.

Texas.

Answer.—This plan has been tried on a few colonies in one of our apiaries, and we may say if one does not object to the extra lifting, the plan is a good one, for these large colonies certainly do roll in the honey. (2) In answer to your other question we may say that we have often fed sugar and yet have never found that it resulted in the loss of queens.

Questions.—(1) A beekeeper here, who has had 50 years' experience with bees, never robs his bees (he calls it robs) until the last quarter of the moon in March. He says if he doesn't take the honey from them then, they will destroy it to make room for new honey. I say they will not. What do you think about it? (2) Is it advisable to change the brood combs every two or three years to keep the workers the normal size? In other words, do the brood combs wear away and have to be replaced?

Oklahoma.

J. W. Young.

Answers.—(1) You are entirely right. Bees do not remove the honey from the hive in order to make place for new honey. Any extra honey that they may have, which they do not use up in brood-rearing, is saved over for winter stores, unless removed by the beekeeper. (2) Brood combs do not wear out, but may be used for a life time. Instead of wearing out, the cells continually become thicker, as new cocoon walls are continually added, so that it is occasionally necessary for the bees to remove some of these inner walls in order to make room for the young larvæ. It is possible that a frame may wear out in time or become broken, but the comb itself is kept in repair by the bees, any broken comb being quickly repaired during a honey flow. Sometimes drone comb needs to be cut out and replaced with worker combs, but aside from this the same combs may be used indefinitely.

Questions.—(1) When a laying queen is taken from a hive, how long may she be kept in an introducing cage until one is ready to introduce her to another colony? (2) If a colony becomes queenless about the 15th day of September after the hon-

GLEANED BY ASKING

Iona Fowls

ey flow, and the weather becomes quite cold all of a sudden, could they rear themselves a new queen providing there were eggs in the cells? (3) When one wishes to increase by taking say four frames

of sealed brood, the queen may be given to such without introducing, but will the queen stay, when there are no bees on the frames with her? And would it be a good plan to screen the entrance until some of the brood hatches, so she cannot get away?

Wisconsin.

M. E. Larson.

Answer.—(1) In the ordinary mailing cage, if the queen is given an escort of bees, she may be kept in this way for a week or so. In export cages, queens sometimes live over a month; and, if put in cages without attendants, and placed over the top of the frames of a super, the queens may remain in the cages alive for two or three months. (2) If a colony becomes queenless the middle of September and the weather is very cold, the colony may be able to raise a new queen if provided with eggs or young larvæ. However, there would be a question as to whether such a queen would be mated or not, for in October there may be very few or no drones in the apiary. (3) The entrance should be screened until some of the brood have had time to hatch, so that the queen will be certain to remain. This plan can be practiced only in warm weather, and unless the weather is very warm the hive should be placed in a warm room or over a strong colony with a wire screen between, in order that this brood may have the heat of the lower colony. Since no bees are given with the queen, the hive must be kept very warm, somewhere near 90 degrees Fahr., if possible.

Questions.—(1) Under the Somerford plan of making nuclei how can the bees get eggs to raise queen-cells when the queen is removed or caged. Any eggs the bees would lay would produce drones, wouldn't they? (2) Some beekeepers of Marion, Ia., have a swarm-control plan for sale. They want ten dollars for it. This might be the same as that given in Gleanings (June, 1918). Please let me know what you think of it.

W. F. Schimmel.

Missouri.

Answers.—(1) At the time the queen is removed the colony still has in the hive eggs laid by the queen and therefore suitable for raising a new queen. (2) Those who know the most about honey production are not offering for sale any swarm-control plan. What they know they are willing and glad to give for the asking. Better hang onto the \$10.00.

Question.—For treating American foul brood, is this plan O. K., to raise the hive of diseased bees placing under it a bee-escape board, a new hive with full sheets of foundation, and then a bottom-board below that?

R. G. McAllister.

Oregon.

Answer.—We do not like the plan of confining the bees above a bee-escape when treating for foul brood. The escape is about

certain to become clogged with dead bees. The bees of the diseased hive then, in their efforts to escape from their imprisonment, raise the temperature of the hive to such an extent that oftentimes the combs melt and honey runs down the sides of the hive. This is soon found by robbers and thus the disease spreads. Even if the escape does not become clogged, the employment of this method makes it impossible for the beekeeper to examine the lower colony at any time while the diseased colony is above, and the diseased colony would have to stay in place for at least three weeks in order to allow all of the brood to hatch. The reason that the upper story could not be removed to examine the lower is that at the least jar the bees from the diseased hive above would load up with diseased honey, pass down thru the bee-escape, and store this honey in the cells of the new hive, thus spreading the disease below. On page 293 of the May issue of *Gleanings in Bee Culture* you will find given a much better plan for treating American foul brood. We know of this plan being tried in an apiary of 23 colonies affected with American foul brood and not one cell of the disease ever showed afterwards. If skunks or stock are allowed access to the apiary, some provision should be made by which it will be impossible for the diseased hives to be jarred in the slightest. If this precaution is observed, we believe you will have decided success with this plan.

Question.—Can you give me any facts concerning the annual honey production in the United States?
Maine. H. M. Daniels.

Answer.—Government reports place the United States annual honey production at 250,000,000 pounds, stating that this is 3 per cent of the amount of sugar consumed in normal times, and is probably less than 3 per cent of the nectar available.

Question.—Will you please tell me what to do with European foul brood colonies at this time of the year? I have just found two colonies having this disease.
Ohio. Selah M. Shuey.

Answer.—If the colonies are badly diseased it would hardly pay to attempt saving them. Moreover, if you have a number of colonies that have not yet contracted the disease, the safest plan would be to sulphur the foul-brood colonies and render the combs before giving the disease a chance to spread to other hives. Otherwise we would advise delaying treatment until next spring, uniting the weak colonies and contracting the brood-chamber of the strong ones to seven or eight combs.

Question.—When I opened my hive one day, I was interrupted at my work, and therefore laid aside the brood combs. Two or three hours later I returned and found some of the larvæ protruding from the cells, and some of them came entirely out of the cells. What caused the trouble, and will all the brood be damaged?
Ohio. Lulu Henderson.

Answer.—When handling a colony of bees, the hive should never be left open or

the combs exposed for several hours. In fact, the hive should be closed again as soon as the work can possibly be finished. To leave it open in that way not only invites robbers but also kills the young larvæ and oftentimes the brood. The larvæ that you saw protruding from the cells were starved larvæ. They need to be fed quite often when in this stage, and, having exposed them in the way you did, the nurse bees were not able to feed them as they should have. In all probability the capped brood was also destroyed, as it would be quite certain to be chilled by that time.

Question.—I have five hives, each having two comb-honey supers for $4\frac{1}{4} \times 1\frac{1}{2}$ sections. Now I have decided to produce extracted honey instead of comb honey and can exchange my comb-honey supers for full-depth extracting supers with good combs. A neighbor suggests that I exchange my comb-honey supers for half-depth supers. If I do this, I shall be compelled to use full sheets of foundation, as I cannot secure combs for half-depth supers. Please give me your judgment.

Michigan.

C. E. Laremen.

Answer.—If you prefer the shallow frames, why not transfer the combs from the full-depth frames into the shallow ones? If cut horizontally along the middle line, the deep comb will just about fill two shallow frames. There will be about a half-inch space along the top bars, but, if the comb is tied in securely, the bees will soon attach these combs to the top bars. Of course, this space will be filled in with drone comb, but this will do no harm, since the shallow combs will be used only for storage of honey.

Question.—I am bothered considerably with spiders about the hives. Is there any special way to keep them out?
Ohio. R. T. Spencer.

Answer.—The spiders will probably do but little harm. It is possible that some bees might become entangled in the spider webs and it would therefore be well to destroy the webs and perhaps kill the spiders that are stationed near the entrances of hives. Spiders, however, are often considered the beekeepers' friends, and are even placed inside of some honey-houses in order that they may keep the combs from becoming moth.

ANSWER BY MEL PRITCHARD.

Question.—I have been using two-frame nuclei for queen-rearing, and after removing laying queen have tried putting in ripe cells (in protectors); and have had poor success in having them accept the virgins, altho I have put them in at different periods after removal; but they seem to want to rear their own cells from larvæ they have. If you can give me a successful plan, I will appreciate it.
Ontario. Alfred Smith.

Answer.—Two-frame nuclei, "especially where they are strong," are difficult to introduce cells to. We have the best success by giving them cells (in protectors) that are not due to hatch for four or five days. These are put in the same day that the laying queen is taken out.

"I HAD intended to contribute further to Gleanings in Bee Culture ere this, but the very abnormal conditions of affairs prevailing here have so far prevented me carrying out my intentions."—C. H. Bocoek, Newmarket, England.

"Honey crop a total failure in this district."—O. J. Goodmausen, Morrison County, Minn.

"We had a very large crop of clover and buckwheat honey here this year."—F. W. Dean, Susquehanna County, Pa.

"The honey crop has been an absolute failure in this vicinity this year."—Ralph A. Irwin, Grant County, Wis.

"The honey crop was small here this year. Swarming came in August and big ones too."—Robert G. Norberg, Isanti County, Minn.

"I greatly regret the death of the late G. M. Doolittle. Altho I was not acquainted with him personally I feel as if I had lost a brother."—Donald A. Spratt, Belize, British Honduras.

"Slowly but surely bee men are learning to 'take out life insurance' for their bees in plenty of good stores and plenty of good packing."—Edw. G. Baldwin, Bureau of Entomology, Washington, D. C.

"The season is nearly over, yet if it should remain warm a while longer, much honey would be gathered—the good golden kind."—W. H. Thornberry, Saline County, Ill., Oct. 1, 1918.

"Last year I tried buying five one-pound colonies and uniting here. It is away ahead of buying five pounds of bees in one container. I bought in about 300 pounds of bees last year."—E. M. Brundage, Saskatchewan, Can.

"Some of my colonies made me 200 pounds of honey, and not one of them that produced 200 pounds has ever swarmed or tried to swarm. I want to build up from them next year."—Joseph B. Fleming, Monroe County, Pa.

"Fine honey flow here from late cotton bloom. If the frost holds off till the last week in this month, the prospect is that bees will go into winter strong in young bees and plenty of stores of the finest quality. Possibly some surplus, too."—H. D. Murry, Fannin County, Tex.

"I notice that J. L. Byer says bees do not need packing under the hives. Now, as he claims to have tested the matter that should settle it. But there is one thing I should like to know: Were the cases close to the ground? If they were not, then a free circulation of air under must be as good as

BEES, MEN AND THINGS

(You may find it here)

extra heat; for surely a colony with packing under it must be warmer than one without. Of course, if the case is on the ground that makes a differ-

ence. I prefer free air under the case, as I believe there is less dampness, and the bees seem to winter just as well."—Thos. Martin, Ontario, Can.

"I took over 500 pounds of honey from six colonies this year. That is not so bad, is it, for a dentist? I used the double brood-chamber method that I saw recommended in Gleanings last spring, using a queen-excluder and transferring the frames of brood above."—Wm. Schaeffer, Lorain County, O.

"I am keeping bees in Florida in the winter and in Indiana in the summer. I am a producer of fine bulk comb honey. I sell it readily for 25 cents a pound. But I find some parties in Florida selling extracted at 15 cents and others even as low as \$1.00 per gallon. Oh, shucks!"—Joseph H. Collins, Madison County, Ind.

"What I like about beekeepers is that they have no secrets concealed from each other. If there is anything you wish to know, just ask concerning it and, if they know, they will tell you, and if they don't know the most of them have the courage to say they don't know."—Edwin A. Wright, Lawrence County, Pa.

"In regard to those Holtermann sky-scrapers shown in October Gleanings, and this, too, in the face of foul brood, and (as he has said) an ordinary location, I will say this: That Holtermann has a very mild attack of European foul brood, or he has none at all, or he had a mighty good cure."—John Smith, Cherokee County, Kans.

"I recently sold three barrels (50 gallons) at \$1.50 per gallon. As the Cuban buyers can not ship to New York on account of the embargo, I would like to know if they ship to Liverpool direct or some other European port. I notice that Taylor & Co. of Liverpool quote in Gleanings \$5.25 a gallon for Cuban honey. It seems to be a tremendous difference between \$5.25 and \$1.50."—F. McCann, LaGloria, Cuba, Aug. 19, 1918.

"I introduced about 15 queens by the smoke method as outlined in the A B C and X Y Z of Bee Culture, except that I used nuclei instead of full colonies. Some of these queens were just transferred from one hive to another, while others were straight from the mails. In every case the queen introduced was laying by the next day. I can only add that I like this method much better than any other method I have tried."—Walter Fleming, Brantford, Ont.

"I neglected to send my subscription for Gleanings in Bee Culture. If I had done so,

it would have made a difference to me, as I sold my honey crop quite a little under the market. Please renew it. Have seen the July number and was surprised at the prices of honey quoted in your journal."—Oscar E. Browner, Herkimer County, N. Y.

"Last spring Edgar C. Polhemus and Cora D. Polhemus divided the bee business of the late D. C. Polhemus. We each got 515 colonies on May 1. We have had a good crop of honey and of good quality and color. One of my yards of 110 colonies averaged 90 pounds to the colony. I attended the National convention at Burlington, Ia., last year and expect to be in Chicago this winter."—Mrs. Cora D. Polhemus, Prowers County, Colo.

"I had, spring count, 75 colonies. My yield was 13,440 pounds of choice honey. The best individual colony yielded 600 pounds of wax and honey. Several others (not calculated separately) must have yielded very little short of this amount. Sources of supply are orange bloom, some white clover and fruit bloom. The bloodwood yielded about three tons, 18 cwt. of clear mild honey which candied to a snow-white hard candy in less than a week after extraction. This was sold for export but is held up for want of shipping space."—W. Hessel Hall, N. S. W., Australia.

"We live in East Jordan about five months in the summer and resume our work theatrically in the winter. Have 20 colonies of bees. We bought our ten-acre place four years ago, and set it all out to fruit, 800 cherry trees and quantities of small fruit. Started the first year with two colonies of bees and increased each year until we now have 20 colonies. We took off over 1,000 pounds of honey last summer. We love the study of bees, and our place would be unbearably lonesome without them. Our stage name is Hanson & Drew."—Mrs. J. Y. Carlisle, Wayne County, Mich.

"Basswood is the universal name in America for this marvelous tree (the linden). Basswood is simply 'bast-wood,' the tree that furnishes 'bast,' the fibrous inner bark, from which primitive man made him mats, cordage, and fishing nets. Here it is named—who knows why?—from its utilitarian value, and there is a break in its history and poetic past. For 'linden' seems a foreign affectation, bookish, literary. Few reading 'The old house by the lindens stood open in the shade' connect the shade trees with the basswood of popular speech. 'Line,' 'lime,' 'linden,' are 'all one reckonings,' save the phrase is a little variations,' as Captain Fluellen would say. The plain American basswood is lawful heir to all the history and romance of the linden, but on account of this unfortunate change of name can never enter into its inheritance."—The Nation.

"This is where the natives trap bees by putting a bark cylinder about two feet long

and thirty inches in circumference, in the fork of a tree. June is the month for robbing, and it makes a beekeeper weep to see the way they smoke out the bees and then shove their bare arms in and pull out the comb. If they get stung, they say the bees are 'penza,' which means mad. A swarm goes thru the air like an express train, with very nearly as loud a roar. September and October are the swarming months here, as the rainy season sets in in November. The honey is very dark with a flavor of something resembling brown moist cane sugar."—J. E. Titterton, Zimbabwe, Rhodesia, South Africa.

"My father was a successful bee and honey manager, always at this time of year having hundreds of pounds of honey; but since his going the farm tenants have occasioned a total loss of all the bees and I deem it needful to resort to only qualified and careful beekeepers for the successful handling of the honeybees. We have much buckwheat, white clover, various blooms of trees and plants, besides the noted basswood, and our best farm is situated so that the little workers may bring their burden down hill. Only today I had delivered by the express company two kits of strained honey from a distance, which cost us three times the old price we once were pleased to sell honey at from one of these same farms where bees flourished finely under primitive conditions 50 odd years ago; but now we can no longer adhere to chance—all is law."—C. W. Griggs, Lycoming County, Pa.

"The article in your September issue, page 533, 'Stores for Winter,' no doubt gladdened the heart of many a beginner, who like myself had been wondering what was meant by 'rich in stores,' 'plenty of winter stores,' and other vague statements. At last we were given definite figures and weights by no less an authority than Mr. Doolittle. Wishing to verify these figures, I carefully weighed my hives, empty hives, hives with combs, hives with foundation, covers, bottom-boards, and 'other things too numerous to mention,' and found the following remarkable discrepancy. A standard dove-tailed 10-frame hive, white pine, painted, with reversible bottom-board and double wood cover flat (Lewis make) with new combs, weighed just 37 pounds, or 17 pounds more than weight given by Doolittle for a hive with old combs. If, as Doolittle says, old combs weigh double as much as new ones, the weight would have been about 40 pounds. According to Doolittle's figures the weight for outside wintering should be as follows: Hive with empty combs (old), 40 pounds; bees and beebread, 5 pounds; honey, 40 pounds; total, 85 pounds. If, as Doolittle says, a total weight of 65 pounds contains ample storage for outside wintering, then 20 pounds of honey would constitute a full winter supply."—W. E. Reim, Dodge County, Wis.

SOME 40 or 50 years ago the liquor business was in the habit of having pretty much its own way. When the churches and good people who believed in prohibition tried to do something, the liquor people laughed us to scorn. They said in action if not in words,

"Help yourselves if you can;" and we proceeded to enact laws which were promptly trampled under foot; and when we tried to get good men in office who would enforce the law without fear or favor, they again laughed us to scorn.* When we were defeated again and again they had even the audacity and cheek to say, right to our faces, things like this:

"Every man has his price. You folks have not enough money, and never will have, to enable you to interfere seriously with our traffic."

Things went on after this fashion until perhaps 30 years ago. At that time Ernest and my son-in-law, Mr. Calvert, were attending college at Oberlin. While there they became acquainted with a theological and law student by the name of Howard H. Russell. Mr. Russell, even in his college days, had the audacity (I guess that is the proper word) to think that he could mass the churches, political parties, and the good people of our whole nation together so that they could successfully fight the great Goliath, King Alcohol. The boys told me about it at different times as they came back to their old home. Let me digress a little right here.

On account of my failing health, perhaps by too close application to business, about this time the boys were called from college before they had finished their prescribed course, and took charge of the business, calling it "The A. I. Root Co." Notwithstanding the help this gave me I came down with a nervous malarial fever; and, altho I recovered after a fashion, a council of doctors declared I would never be a

*The city daily papers and, to some extent, country papers uttered no protest, because they got big prices for running liquor and beer ads, "liquid bread," etc.



Who is this uncircumcised Philistine, that he should defy the armies of the living God?—I. SAMUEL 17:26.

I come to thee in the name of the Lord of hosts, the God of the armies of Israel, whom thou hast defied.—I. SAMUEL 17:45.

They shall run, and not be weary; they shall walk, and not faint.—ISAIAH 40:31.

Lord, now lettest thou thy servant depart in peace, according to thy word.—LUKE 2:29.

well man. They said I would have to give up business entirely and that I had better go away off to some sunny clime—perhaps California—and take things easy during the few years I probably would have to live. After I was well enough I put off. At Portland, Ore., I was down with

my old trouble once more, and sent for the best doctor in the city. In a little while he told me the same story. He advised me to inform my wife that if she wished to see me alive she should come to me quickly. I have told all about this in the back numbers of our journal. Mrs. Root hustled off, took charge of my diet, and, knowing me personally better than any other person in the world did, she soon had me on my feet, and got me back home in fair shape. By the way, good friends, this is by no means the first time that a good wife has proved to be of more account than (I was going to say) the best doctors in the whole wide world. If you, my good reader, have not a wife, and you are old enough to have one, you had better "get busy" right away, "that your days may be long in the land." In fact, Mrs. Root got me in such fair trim that I followed the trail and climbed Mount Wilson on foot before we returned to Medina. Many of you have read about it, and remember what I said about that precious gift from the loving Father—a "second wind." When I got back home I proceeded to take the doctor's advice and take things easy. But perhaps I was not "built that way." My old trouble came back, and I was moping around thinking my end was near.

About this time Ernest came over one morning—I think he was riding a wheel. He said to me something like this:

"Father, since the doctors have given you up I want to give you a suggestion."

I do not know but I was a little vexed because he assumed, or seemed to assume, his fitness for such a responsibility. He explained that he wanted me to try riding a wheel. I replied:

"Why, my dear boy, I could not sit up

on a wheel, much less furnish strength to propel it."

But he finally induced me to get on the wheel and tried to start me off. Of course I fell over because I had no faith in him nor in the wheel, and I might also say I had little in the great loving Father. Yes, I had prayed over the matter of my health, but, I fear, as so often happens, without very much faith. At Ernest's urgent solicitation I tried the wheel again—maybe several times. Finally one morning he urged me to try it "just once more." I objected, but he was importunate. Of course Mrs. Root and the children sided in with Ernest. Finally I said something like this:

"Just to keep peace in the family I will try the thing once more; and after that I never want to hear it mentioned again."

Now what do you suppose happened? I did not manage to get off right where I had planned, and finally put a little force on the pedals at a place where the road was downward. It finally got to going so fast (downhill) I could not well get off, and, as I did not know how to stop, I concluded that my best way to dismount was to go to the top of the next hill; but about that time my faith and courage began to arise. I went down that hill and up another, and went on till I was pretty well out of sight. When I was rested a little, instead of going back home I decided to play a little trick on the good wife and children, and go ahead. I knew of a beautiful soft-water spring at a place called Spruce Run. I managed to get over to that spring, and had a most delicious drink of that beautiful cold soft water. It revived my spirits and kindled my enthusiasm to such an extent that I went on to Sharon Center, eight miles from home. There I had such a dinner as I had not enjoyed before for months. Then I took a nap to rest up well, and got back rejoicing in the prospect of "a new life." In fact, I recalled somewhere in the Bible where there is a promise to God's loved ones something like this: "They shall run and not be weary; they shall walk and not faint."

I found the family much worried for fear I had fallen off by the wayside and perhaps could not get home. Next morning I was off for another ride, and it was more rides every day and new life. Some time after this I met our old family physician on the street. Said I:

"Doctor, you may remember you said I would never be a well man again."

With a smile on his face he nodded. Then I went on:

"Well, doctor, you physicians make mis-

takes, do you not? I rode half way across the State of Ohio yesterday."

He replied:

"Yes, Mr. Root, it is true. Doctors *are* human like other people; but had you told us, when we pronounced our verdict, that you were going to quit business and "play boy" again by riding a wheel as you have been doing, we might have changed our decision. From past experience we judged *you* (like others) would soon get back into the harness again, and that would finish you up. Keep on riding your wheel. But remember, this thing is hanging over you, and probably will be to the end of your life."

Perhaps I may tell you that I soon rode pretty much all over Ohio. Then I had quite a trip over the Ozark Mountains by wheel (visiting beekeepers) down in Missouri and later over Yellowstone Park, Colorado. When winter came on I rode pretty well over Florida, then I went to Cuba. I visited beekeepers on their beautiful smooth highways by means of that same wheel. Another winter I rode over the wonderful English highways in the Bermuda Islands and studied potato culture there. You will find all about it in our potato book.

Now, there is a great moral in this little story I have just been telling as a kind of side issue to this Home paper.* Two things gave me back a new lease of life—first, being constantly out in the open air; second, developing every muscle in my body by wholesome exercise outdoors. Perhaps I should add a third—having "a hobby to *ride*," as well as a wheel. Now, it is not necessary that you good people who are suffering from poor health should *all ride a wheel* in order to become interested in some line of developing and bringing out the possibilities of God's gifts. Down in Florida, in California, and all over the world, there are people who have "run away from their own funerals" by getting interested in some outdoor occupation. Sometimes it is chickens, or bees, or any similar line of work. You will find healthy long-lived people all over Florida who have got back to health, after being given up by their doctors, by becoming enthusiastic in growing some particular thing in winter—something that no one else has done before; getting new potatoes when there is not a new potato in market (as I did) in Florida dur-

*The good wife got me thru the siege in California, and later on the boy Ernest came in when the doctors failed. And I said every young man should have a wife when he is old enough. I want to add also, some boys and girls, providence permitting.

ing the past winter, is along the same line.

Let us now get back to Goliath, and to David with his sling and the pebble he picked out of the brook. One morning Ernest informed me that Howard Russell had called a meeting in Oberlin, Ohio, (May 24, 1893) to discuss his project in starting what he called the "Anti-Saloon League," and suggested that I go over on my wheel and report. Of course during all these years I had been red-hot on temperance as usual. It was a small meeting so far as numbers were concerned, but there were present some of the best men, not only in Oberlin but in Ohio. Mr. Russell outlined his plan, which was to unite all friends of temperance. It was to be non-sectarian, non-denominational, and its purpose was to wage war against the liquor traffic. As an illustration along the possibilities of law enforcement he had, during the previous winter, been engaged as pastor in one of the leading churches in Berea, Ohio. There were, perhaps, half a dozen saloons in Berea at the time. Like all other saloons they sold to everybody, boys included, without any regard to law or gospel either. Well, during the winter Russell got a number of boys to go to the saloons and buy liquors. Each bottle was labeled with the date, name of the purchaser, and name of the saloon-keeper. When he had a bushel basketful of such labeled bottles the saloon-keepers were called up before the mayor. When they saw that basket of bottles they realized they were "caught, red-handed" in the violation of law; and even the saloon-keepers' attorneys owned up they were whipped: If I remember correctly they said to Mr. Russell, "What do you want us to do?" He told them he wanted them to quit the business, and added that he would drop legal proceedings if they would do so. Now, my impression is they quit, and that Berea went dry. This was to illustrate the *possibilities* along the line of law enforcement, if you go about it right. After the meeting an old gentleman by the name of E. W. Metcalf came to me and said something as follows:

"Mr. Root, nobody knows the outcome of what has been started here today. It promises deliverance from this great giant that has been cursing our nation like an octopus for centuries past. Now, this undertaking, like every other great revolution for righteousness and godliness, *needs money*. They should have one thousand dollars to start with. Nothing less will enable it to get on its feet. I will give half if you will give the other half."

I explained to my good friend that I

agreed with him; but as our business had been turned over to my son and son-in-law I could not make any agreement until I consulted the boys.

"All right," he said; "and I will go with you and we will talk it over."

He made a visit to Medina, and, somewhat to my surprise, the boys, knowing Howard Russell, agreed to it. Let me tell you right here, friends, that 25 years ago five hundred dollars was not hanging on every bush as it is now; and it was quite a task for us to scrape up that amount then. During the past 25 years the Anti-Saloon League has had its victories and its defeats—for a time mostly defeats. I remember that at one of the meetings when Mr. Russell had outlined the work we had to do he said something like this:

"Friends, the outlook now is quite hopeful—more so than at any time during the years past. But if we are beaten *again*, we must not become discouraged nor must we stop a minute."

Then he outlined what was to be done in case of defeat. By the way, friends, I spoke a little back about the wets claiming that every man has his price. At that big national convention at Oberlin on May 24, 1918, when some three or four hundred people were present, Wayne B. Wheeler, who had been with the organization almost as long as Mr. Russell, made the remark that he had been recently offered the sum of ten thousand dollars to let up in his prosecution of lawbreakers. He told the liquor men that *ten million dollars*, even if they could scrape up that much, would be no temptation; and they have found a good many times just of late that the saying that every man has his price is *not true*. May God be praised, that it is *not true* during these war times!

When I started wheel-riding, as I have told you, somebody said, jokingly, that I had "run away from my own funeral riding on a wheel." Well, friends, I have kept away from that funeral until I am 78 years of age; and I am praying that the Lord may let me live still a little longer. I want to live to be on hand and *present at another funeral*—that of John Barleycorn; and may it be his funeral not only in the United States but in the whole wide world. And if this comes to pass as the result or the outcome of this awful war, it will save more lives in the future than have been lost by the war, and contribute to human happiness more than anybody can comprehend. And when this funeral comes to pass, then I shall be ready to say in the language of our concluding text, "Lord,

now lettest thou thy servant depart in peace, according to thy word."

Later.—It is now September 9, but our friend Howard H. Russell is still in the harness. The letter below explains itself:

My Dear Friend Root:—Now I am making a second visit to Florida to assist the workers here a little in the final drive to brighten up this corner of our United States map. Supt. Crooke has been doing heroic and tireless service. You perhaps have heard the details somewhat of the closing down of the rum traffic in Duval county, which put the business out of operation in one of the swampiest localities we have had in the country, viz. Jacksonville. The changes made here already are perceptible to the naked eye and without either telescope or microscope. A great many people whose sentiment has been heretofore in favor of the sale of liquor are now converted to prohibition, the same as has been the experience of thousands of voters, especially the business men, in Denver, Portland, Seattle, Detroit, and other cities. Also Nassau county, where its county seat, Fernandina, has been supplying liquor to the thirsty Jacksonians since Duval county went dry, has been put under drought conditions by a majority in the whole county of over two hundred. Add to this a recent victory in Okeechobee county on the East Coast, and you will understand that our League workers have been doing good service.

One of the most gratifying incidents of our pleasant reunion and anniversary at Oberlin was to see you and Ernest there and to hear those earnest words, from your heart, of thanksgiving to God and of grateful satisfaction that you have lived to see the wonderful revolution in sobriety and anti-liquor reform in which you have had so long and vigorous a share. When we were having our conferences together at Medina, we were quite in the dark as to how long it would take, and the chances seemed then to be we were starting something others would have to finish. In a few weeks now we shall reach the quarter-century anniversary of the writing of those two checks for \$500 each by Mr. Metcalf and yourself, which first stirred the Buckeye State with the fact that something was really doing. It looks now, dear old comrade, as if we should both be permitted to attend the post-mortem wake and jubilation of completed victory. God grant this. Affectionately,

HOWARD H. RUSSELL.

Jacksonville, Fla., Sept. 3, 1918.

In addition to the above I have just been thanking God several times a day that last Saturday, Sept. 7, the Cleveland *Plain Dealer* informed us that all breweries in the United States would have to quit business Dec. 1, at least until the end of the war. So you see things are coming our way just now, at least for a time. Praise God, from whom all blessings flow.

of my happy surprises to see such a wonderful growth of potato vines at the time I was there, the last week in August. The potatoes covered the ground so that it was almost impossible to find a place to plant my foot; but they were already digging them every day for dinner, even if the tubers were not yet half grown.



1. A single potato stalk from a garden in Wyndmere, N. D. Mr. Forrest and "yours truly" are holding a branch.

I had not been up very long when Mr. Forrest joined me. You may remember I said he got in after I had retired; and, soon after, George himself appeared. I asked him to get a kodak and take a picture of a single potato stalk, and here you have it. This one stalk or branch where it came out of the ground was pretty nearly as large as a hoe handle, and there were three or four others in the same hill very nearly like it. This garden was a pretty fair picture of most of the gardens in and around Wyndmere. Potatoes, corn, and



2. Mr. Forrest, "yours truly," Mr. Manikowske and his son Wallace, his daughter Ethel, and the good wife.

NORTH DAKOTA AND THE MANIKOWSKE FAMILY.

When I saw the wheatfields and cornfields in North Dakota I was, as a matter of course, interested in the gardens; and I was up the next morning. I rather think, before anybody else had been stirring, and interviewing George's garden. It was one

everything seemed to be far in advance of those I left in Ohio. When I asked if he had not put on a large amount of stable manure or fertilizer, he replied that chemical fertilizers were unknown in North Dakota, and in a good many places they ob-



3. The first original electric windmill for generating electricity for farm use.

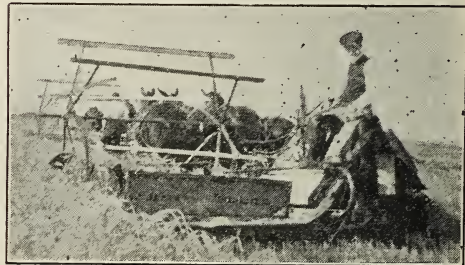
jected to stable manure because it makes such a growth that the wheat and oats fall down wherever the manure is applied. By the way, when I visited Mitchell, S. D., something like 30 years ago, they were hauling the manure out of town to a river-side and dumping it in the water. They said the land did not need it. I do not think that any of that kind of work is going on now. The beautiful gardens, and the large amount of stuff they were growing, so impressed me that I felt a great desire to spend one summer gardening in North Dakota.

I think I have remarked before that the Manikowske family are geniuses. There are two boys and two girls. Every one of them seemed bent from childhood on getting an education, but they chose different lines. I have had a good deal to say about George. Well, his brother, seen in the picture, is a good deal like him; but his bent seems to be in a different direction. The two girls are both teachers. The one in the picture, with a pair of feminine overalls, had a letter offering her a large salary

to teach, instead of helping her father on the farm. The matter was referred to me for my advice. After reading the letter and studying on the matter for a while, especially considering her mechanical skill, I advised her to help harvest the present tremendous crops and thus relieve her father of considerable care and worry. I now want to tell you a little story about George's brother, shown in his working rig beside his father.

While George's hobby was windmills and electricity this brother was crazy about *music*. One spring when the weather was just right for cultivating the corn, and the work was away behind, the two boys went out each with a team to cultivate. Well, this younger son had just got hold of a little piccolo. He had always been crazy for a fife or a flute. The piccolo was made in two pieces. The boy put it in his pocket when he went out to cultivate, and by some mischance a part of the instrument slipped out of his pocket, and, of course, it was buried in that fine soft soil by the cultivator. Some time during the forenoon the father came out to see how the boys were progressing. He was greatly vexed to find them both down on their hands and knees grabbing over the dirt to find the missing part of the piccolo. I think likely he scolded a little; and I am afraid that if I had been in his place I might have said things that I would have been sorry for afterward. They found the missing part, but George said they clawed the dirt over for pretty near a half a mile before they found it.

Well, the boy kept practicing in his spare moments on the piccolo. Then he



4. A. I. Root helping to harvest the crop in North Dakota.

bought a flute, and pretty soon he bought a better one. He was frequently asked why he wasted his money on such "fool contraptions." When he paid out over \$200 for one of the best flutes the world could furnish, the friends and neighbors thought of him as they did of me when I paid \$20

for that one Italian queen bee. Well, I saw and heard the boy play on his \$200 flute. The sister standing next to him in the picture played the violin while somebody else played the piano. And what do you think happened? Several times, if I remember correctly, this boy has been paid \$100 to go and play just one evening for some particular entertainment with his \$200 flute. Do you catch a glimpse of the moral? Do not scold your boy if he does not happen to be just like other folks, especially if he should take a notion to push off in some eccentric way as did that boy with the piccolo and his brother with the windmill.

We are now ready to get back to the windmill. It was my pleasure to see the original windmill invented and put up by George Manikowske. As it is out on the level plain they did not think it necessary to put up a very high tower; and there are no trees or buildings to interfere with the wind except in one direction, and that is right around the homestead. I asked if it was not true that the mill did better work when the wind did not come from the direction of the trees and buildings around the home, and I was told that it did; but so far it has furnished sufficient current for all purposes about the farm. The storage batteries are located in the attic of the house, as they seemed to have more room there. A cellar is always a better place than an attic because the evaporation from the acid in the batteries is not as rapid. The individuals in the picture are about the same as those I have mentioned before, George and his wife and one of the little girls being on the right hand. Very likely the father was a little disappointed to find that none of his boys (or girls either) seemed to take kindly to farming. One took to electricity, another to music, and the two daughters are both teachers. The good father was wise, however, in not sitting down too hard on either of his two boys. If I got it right, when the electric windmill was first started, with some misgivings, he mortgaged his farm to get the invention on its feet.

Elsewhere we give you a picture of "yours truly" driving a four-horse-power harvester. George's mother stood beside me and told me what levers to push and which to pull, etc.; and I am afraid she considered me a rather stupid pupil, for I had gone almost around the half-mile field before I caught on to just what was wanted.

May God speed the people of North

Dakota in their effort to do their bit toward feeding the world and thus ending the war.

I CIVIL I

DRY TERRITORY FOR THE CANTONMENT; DOES IT PAY?

We clip the following from the *Cleveland Plain Dealer*:

Prof. William J. Hutchins of Oberlin Graduate School of Theology, religious director for the past year at Camp Sheridan, Montgomery, Ala., told members of First Congregational Church yesterday morning that the army camps in the southeast are as clean as any in the world.

"There are evils in the camps—men's evils," said Prof. Hutchins, "but men who never made victorious fights against vice before entering the army are doing that today, aided by the excellent morale and surroundings."

"For five months I was with 450,000 enlisted men, and in all that time I saw only one drunken man. That is not a tribute to the virtue of the soldier so much as it is to the wisdom of the War Department in putting their cantonments in dry territory and to the vigilance of the military police."

ANOTHER REASON (AND A BIG ONE) FOR VOTING OHIO DRY.

The Plain Dealer for April 1 contains an article headed as follows:

U. S. OPENS SOCIAL DISEASE BATTLE; PHYSICIANS
TO BE ORDERED TO REPORT ALL PATIENTS
TO HEALTH BOARD.

From this article we clip three paragraphs, as below:

Dr. Cole said medical authorities estimate that 10 per cent. of the population of Ohio is afflicted with syphilis and that this figure does not include milder forms of social diseases.

He announced one of the distinctive features of the campaign will be a vigorous fight for total abstinence.

"Booze," he claimed, could be held indirectly responsible for 68 per cent of all cases of venereal diseases.

Extreme danger from these diseases, Dr. Cole stated, has been emphasized by war conditions and has resulted in a request by the federal government to state authorities systematically to root out the menace.

PROHIBITION, AND THE AWFUL (?) CONSEQUENCES THAT FOLLOW.

The clipping below comes from the *Jacksonville Times-Union*:

Prohibition is accused of waste in that the value of many investments has been destroyed. One of these is the great jail at Birmingham, Ala., which cost thousands, and must now be sold for a factory, since the county has no use for it. How many counties supported so many drunks in the late past?

Special Notices by A. I. Root

THE ITINERARY OF A BREAKFAST

BY J. H. KELLOGG, M. D.

If you want an "inside view" of what happens
FOR SALE.—3

, Mich.

beekeepers
keepers, four
up.

catalog of hives,
they are nice and
S. Co., Paris, Tex.

Pennsylvania D. ... for Root Bee Supplies,
time and transportation expense on all stan-
dard hives, sections, etc., at catalog prices.
Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Tame rabbits, any color or num-
ber. Breeding stock, 4 to 5 months old, \$2.00 per
pair. Prompt shipment. Order now.
George Tebbe, Dow City, Iowa.

THE ROOT CANADIAN HOUSE.—73 Jarvis
St., Toronto, Ont. (Note new address.) Full line
of Root's famous goods; also made-in-Canada goods.
Factories and engines; GLEANINGS and all kinds
of literature. Get the best. Catalog free.

FOR SALE.—100 8-frame bee hives with sec-
tions in good condition, \$1.50 each; 400 supers, 8-
frame and 10-frame at 50c. Write

means a complete success.

In Our Homes for June I mentioned Dr. Kellogg's statement that it takes 10 pounds of grain to make a pound of beefsteak; and Prof. Thorne said their experiments indicated that this is not far out of the way. Well, since then I have been wondering how many pounds of grain it takes to produce a dozen eggs, or, say, a pound of eggs. Dr. Kellogg says in this new book, "For every pound of food in the form of eggs we must throw away nearly 20 pounds of good food."

Now, our experiment stations have again and again figured out the cost of eggs; and ever since grain has been away up at present prices there has been complaint that the price of eggs has not gone up accordingly. Where one keeps just a few chickens and lets them run around the premises, and gives them the refuse from the table, there is no doubt that it is a money-making operation, or rather, a money-saving scheme. But where one starts an egg-farm and keeps laying hens by the hundred or thousand, I tell you he must figure close and be up to date or he will sink money. Every little while somebody writes me to know if he can not move down to Florida and get rich keeping chickens. When I say emphatically no, very often somebody suggests that he can grow his own chicken feed and not have to buy it. Yes, that is true; but, my dear friend, would not that same chicken feed that you grow, at least a part of it, sell in the market for more money than the eggs would bring? So far as green feed is concerned, this can be grown in Florida all winter; and down there the chickens seem to do well on a very large amount of green feed that takes the place of expensive grain.

I think it will pay you well to get this two-dollar book and read it carefully. There are quite a number of X-ray illustrations. Address Modern Medicine Publishing Co., Battle Creek, Mich.

Southern Beekeepers, Attention!

SAVE TEN PER CENT ON EARLY ORDERS

Root's goods at Root's prices, less 10 per cent for early orders. By Dec. first we expect to have our catalogs out and have the largest stock in the South. We pay the freight on the long haul from the factory here and sell to you at just what they will cost you at the factory.

We also manufacture an almost complete line of Supplies from Cypress, The Wood Eternal, which we guarantee to please you in every respect. We are right in the heart of the belt where this famous wood grows and so can make our prices cheaper. We have over a thousand colonies, all of which are in Cypress Hives, and haven't one fault to find with the wood for hive material. It will pay you to get our catalogs whether your wants are large or small, before ordering elsewhere. If you want a special or complete outfit, let us quote you on it.

The Penn Company, Penn, Miss.

Manufacturers and dealers in Beekeepers' Supplies; Breeders of Bees and Queens

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Clover-amber blend honey at 25c. VanWyngarden Bros., Hebron, Ind.

FOR SALE.—350 lbs. wax, 2,400 lbs. water white clover extracted honey to the highest bidder. W. O. Hershey, Landisville, Pa.

RASPBERRY HONEY.—This honey has just enough buckwheat honey mixed with it to color it some. It is from one of the Hutchinson apiaries, and has all the fine qualities and flavor that the Hutchinson honey is noted for. It is put up for sale in 60-lb. cans. Price, 25c a lb. Sample by mail 20c which may be applied on purchase of honey.

John Hutchinson, Lake City, Mich., R. D. No. 2.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey, car lots and less. Mail sample, quantity and price. W. Morris, Yonkers, N. Y.

FOR SALE.—5 tons clover honey in new 60-lb. cans at 25c per lb. f. o. b. Pembroke, N. Y. Vollmer & DeMuth

WANTED.—Comb and extracted honey, also beeswax. Send samples. C. S. Fryer, 386 Halsey St., Portland, Ore.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—White or light amber extracted honey in any quantity. Kindly send sample, tell how your honey is packed and your lowest cash price, also buy beeswax. E. B. Rosa, Monroe, Wisconsin.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations. M. Betancourt, 59 Pearl St., New York City.

WANTED.—Extracted and comb honey. Carload or less quantities. Send particulars by mail and sample of extracted. Hoffman & Hauck, Inc., Richmond Hill, N. Y.

BEESEXWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina. 36c cash, 38c trade. We will pay 1 and 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival. The A. I. Root Co., Medina, Ohio.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

F. goods at Root's pri

SEND TODAY. by labels. Liberty Pub. Co., id, Ohio.

FOR SALE.—Hand-gar over seed now ready. Write for prices. E. C. Bird, Boulder, Colo.

FOR SALE.—One Dadant's uncapping can, good as new, \$7.00; 50 cases 60-lb. cans, used once, \$20. Mason, Mechanic Falls, Me.

FOR SALE.—Good second-hand 60-lb. cans, two to the case at 50 cents per case in lots of 50; will exchange for honey. E. B. Rosa, Monroe, Wis.

FOR SALE.—80 good second-hand 5-gal. cans at 65c per case of two cans. John Kneser, Hales Corners, Wis., R. F. D. No. 1.

Beeswax worked into comb foundation at money-saving prices. Satisfactory work guaranteed. Send for terms. E. S. Robinson, Mayville, N. Y.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices. Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Good second-hand 60-lb. cans, two to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—You can make your own comb foundation and earn big money making it for others. New, easy, rapid process. Machine and all apparatus complete with full instructions, \$100. Wax worked on shares or for cash. J. J. Angus, Grand Haven, Mich.

WANTS AND EXCHANGE

WANTED.—Second-hand honey extractor. E. L. Gardiner, 44 Otis St., Murtonville, Mass.

WANTED.—To purchase hand extractor and steam uncapping outfit. N. A. Clay, Oberlin, Ohio.

WANTED.—Colonies of bees in lots of anywhere from 5 to 500. State lowest cash price wanted. H. G. Quirin, Bellevue, Ohio.

WANTED.—1,200 lbs. light extracted honey. Send sample and state price. Edw. M. Klein, Waukegan, R. D. No. 1, Ills.

WANTED.—Bees and equipment for good four-room house and lot in Topeka, Kans. A. V. Small, Box No. 218, Augusta, Kans.

WANTED.—5 to 50 strong colonies of Italian bees in 10-frame dovetailed hives. Evan Jones, Franklinville, N. J., Box 94.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

Good 250-egg capacity incubator, only been used for one setting; 1 Spanish jack; 1 Jennett colt; 2 Spanish Jennetts. Would exchange for bees.

C. C. Combs, Gum Neck, N. C.

SPOT CASH.—For bees in good condition in 8- or 10-frame Langstroth hives located in So. Calif. Write A. E. Lusher, 945 Kirkwood Ave., Pasadena, Cal.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you.

Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

50 acres unimproved property, good timber, quarter part large baywood (Magnolia) Louisiana, ½ mile from railway station. Good bee pasture. \$500 cash. Paul Gaertner, Rocky Point, R. F. D., N. C.

BEAUTIFUL HOME FARM, improved rich soil, well located; good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. 80-acre farm, \$80.00 per acre; \$7,000 for farm and bees, 150 extracting supers and combs, 150 shallow supers, 2-frame extractor, 2 large honey tanks. Terms, \$3,000 cash, balance time. A wonderful opportunity—a bargain. Reason for selling, poor health.

W. M. Penrod, Ronneby, Minn.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens.

W. G. Lauver, Middletown, Pa., R. D. No. 3.

FOR SALE.—Three-band Italian queens.

W. T. Perdue, R. D. No. 1, Ft. Deposit, Ala.

No more queens this season. Root's beekeepers' supplies.

A. W. Yates, Hartford, Conn.

Well-bred bees and queens. Hives and supplies.

J. H. M. Cook, 84 Courtland St., New York.

Golden Italian queens, untested, \$1.00 each, six for \$5.00. E. A. Simmons, Greenville, Ala.

WANTED.—Bees in the far south where there is early honey flow. Heard & Ellison, Kinde, Mich.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th.

Allan Latham, Norwichtown, Conn.

Three band Italian queens, untested, \$1.00; select untested, \$1.25; tested, \$1.50; select tested, \$2.25. H. W. Fulmer, Box G, Point Pleasant, Pa.

FOR SALE.—Three-banded Italian queens, safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnetts, Va.

Good queen-breeder wanted for 1919. State experience and salary expected, for position in village. Good school, churches, etc. Man exempt from military service preferred.

W. D. Achord, Fitzpatrick, Ala.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

BEEES FOR SALE.—50 colonies Italians, 10-fr., either section or extracting supers; winter stores; no disease. \$300 cash on ground. Extra supplies, hives and extracting outfit, \$100.

R. O. Dickson, Robinson, Ills.

FOR SALE.—During 26 years of active beekeeping and during the last 10 years have operated not less than 1,400 colonies of bees, and during all of that time have SOLD ONLY 28 COLONIES. I am now going to offer about one-half of my holdings or 800 colonies for sale, in fine condition, with full equipment. This offering is an independent plant and a good money-maker for one who is a business man and understands bees—a proposition I can show without hesitancy of opening any hive to any one. A partial payment and proper security will be acceptable, with reasonable time for the balance.

J. W. George, El Centro, Box. No. 62, Calif.

FOR SALE.—60 colonies of three-band Italian bees in sound standard 10-frame hives, Hoffman frame, guaranteed to be free from disease, one story complete, \$7.00 per colony. On account of selling bees by the pound we have a big stock of 10-frame second-hand hives all the standard size, with Hoffman frames in hives and supers, some 700. One-story dovetailed hives with frames, cover and bottom, \$1.25 each; bodies with frames 65c each; Ideal supers with frames 40c each. Some 300 home-made, same material halved at corners and nailed both ways, just as good as the dovetailed but do not look so well, complete hive, \$1.00 each, supers 30c each, bodies with frames 55c each. All hives are painted white. We also offer new nucleus and shipping cages all nailed up ready for use as follows: 28 3-frame nucleus, 30c each; 57 2-frame nucleus, 25c each; 28 3-pound cages, 40c each; 148 2-pound cages, 30c each; 150 1-pound cages, 25c each.

Hyde Bee Co., Floresville, Tex.

CERTAINLY A BARGAIN

We have in stock at Medina one Root Improved Wax Press that has become shop worn, and the plunger is somewhat rusted, but the press will give just as good service as a new one. To clear this from stock we offer it at the very low figure of \$10.00 cash with order. A new press would cost you \$25.00.

A. I. ROOT CO., Medina, Ohio.

Special Notice by A. I. Root

OFF TO FLORIDA AS SOON AS OHIO VOTES DRY.

First and foremost, if you are a voter, for heaven's sake, and for the sake of unborn generations, "get busy," and be sure your vote goes in on the right side. And even tho (I am sorry to say) the good mothers and wives can not vote *just yet*, they can wield a mighty influence if they choose; so, all of you just get busy when you see this printed page. Mrs. Root and I are planning to start on election day, after my vote is in; and when I am down in my Florida home in Bradentown write me just as many letters as you choose, and just as long; but if you want an answer please do inclose an addressed postal card. I think I can manage to give you each and all prompt answers if you will not ask me to answer more than I can easily crowd on a postal. Of course I am happy over the brilliant prospects now opening up day by day, not only for a dry Ohio but for temperance, "peace, and good will" thruout the whole wide world.

Your old friend,

Oct. 18, 1918.

A. I. Root.

BEEKEEPERS' SUPPLIES

A Good Stock of the

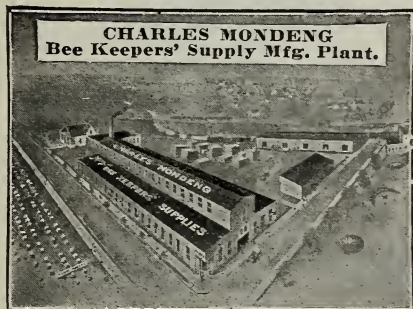
Lewis Beeware
and
Comb Foundation

Is at your command at
factory prices.

Western Honey Producers
Sioux City, Iowa

We have a market for your honey and
beeswax.

BEE SUPPLIES AT WHOLESALE



All boxed ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames, of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. Send for a price-list. I can save you money.

*Will Take Beeswax in Trade at
Highest Market Price.*

Charles Mondeng

146 Newton Ave., N. Minneapolis, Minn.

Our Food Page—Continued from page 670.

flour, baking powder, and salt together, cut in the shortening and add enough milk to make a drop batter. Drop by spoonful over the apples and bake in a moderate oven about 40 minutes. If the apples are not of the quick cooking sort, it is well to cover them and bake them until partially done before adding the crust. Barley flour may be used instead of the rice flour. Eat with butter and honey or the following sauce.

HONEY SAUCE.

2 tablespoons butter	1 cup honey
2 tablespoons corn-starch	$\frac{3}{4}$ cup water
	$\frac{1}{8}$ teaspoon salt

Melt the butter and blend with the corn-starch, add the honey and water, and cook in double boiler until it thickens.

POTATO ROLLS.

(Adapted from recipe in Oct. *Delineator*.)

1 cup mashed potatoes	1 teaspoon salt
1 cup sweet milk	1 cake compressed yeast
4 tablespoons shortening	2 tablespoons warm water
1 or 2 eggs	
About 4 cups bread flour	2 tablespoons honey, if desired

Beat the egg in a bowl, add the milk, which should be scalded and cooled to lukewarm, the yeast dissolved in the warm water, the salt, mashed potatoes, enough of the flour to make a batter (2 cups), and the shortening (melted). Beat thoroughly, cover and put in a warm place to rise. When light, add the rest of the flour, which should be enough to make a dough, knead until smooth and elastic and let rise again. When it has doubled in bulk, roll out about half an inch thick, cut with a biscuit cutter, brush with melted butter, fold over and place in an oiled pan to rise again. When light bake in a quick oven 15 to 20 minutes. Rolled oats or any of the substitute flours may be used instead of 1 cup of the wheat flour.

All measurements level. Flour sifted once before measuring.

BOOKS AND BULLETINS

AGRICULTURAL GEOGRAPHY.

The U. S. Department of Agriculture at Washington has recently issued an atlas of agriculture, prepared by Prof. V. C. Finch of the University of Wisconsin and O. E. Baker of the Office of Farm Management. This atlas contains much information of interest to every one engaged in agriculture, but we wish to call attention to a few of the subjects treated which apply especially to beekeeping. The various sources of food supply are treated separately.

Alfalfa.—With the map showing the alfalfa acreage is the following statement concerning the distribution of this valuable forage crop—valuable as forage for bees as well as for larger animals. "Alfalfa is a crop whose distribution is limited both by soil conditions and by climate. It demands soils that are not acid, and its culture is most profitable in a climate that is not rainy during the summer. Consequently it thrives best in the Western States, and fairly well in the limestone regions in the East,

(Continued on page 697.)

Worth More to Family Life To-day Than Ever Before

The Youth's Companion

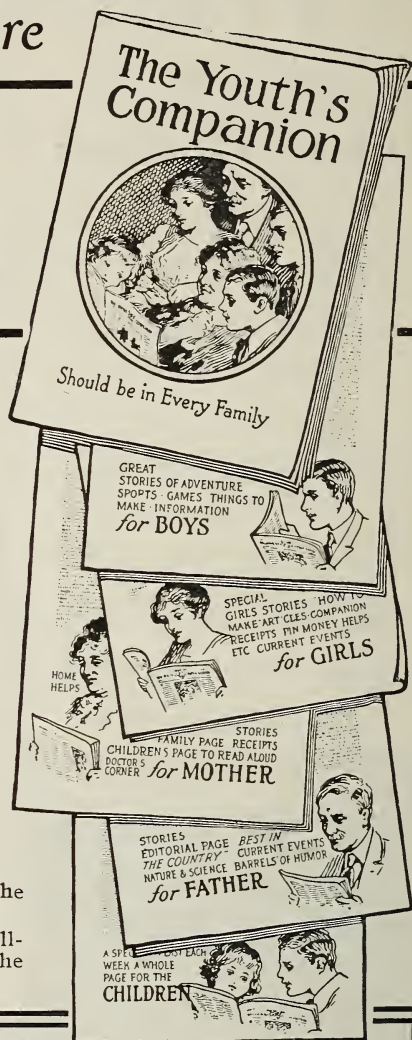
Now is the time when Families reach out after genuine character-making reading. Help, cheer and inspiration are in demand. The Companion deals with the fundamentals, and its great quantity and diversity and economy make it "appeal to these times."

Great abundance of the very best, from every worth-while source, in wonderful variety and in weekly installments. Supplies all ages. Serials, Short Stories, Articles, Receipts, Puzzles, Sports, Games, Money-Saving Suggestions, Home Efficiency and Economy, etc. **A greater help to the Family—A greater Bargain in reading than ever—52 Times a Year.**

Still \$2 a Year

Takes the place of several publications at the price of one.

The following Offer makes an unusual, all-round reading supply at a bargain. Note the Offer carefully and act to-day.



Every NEW subscriber who at once cuts out and sends this Offer with \$2.00 will receive all the following:

1. The Youth's Companion, 52 issues of 1919, \$2.00
2. All remaining Nov. and Dec. 1918 issues FREE
3. The Companion Home Calendar for 1919

ALL FOR

\$2.00
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BEAUTIFUL U. S. SILK FLAG—window display size. Nothing like "Old Glory" these days for interior window decoration. Size 7 x 10 inches. Will be sent with each Companion subscription, or with the combination subscription, provided 10 cents extra in stamps is sent.

THE YOUTH'S COMPANION, BOSTON, MASSACHUSETTS

PATENTS

Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building,
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"Special Crops"

A high-class illustrated monthly journal devoted to the Growing and Marketing of Ginseng, Golden Seal, Senega Root, Belladonna, and other unusual crops.
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BEE-SUPPLIES

FALCON LINE

We carry the largest supply
in our section. Send us
your inquiries.

Lowest Prices, Quality Considered

C. C. Clemons Bee Supply Co.

128 Grand Ave.

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Dont Send a Penny

These Len-Mort Work and Outdoor Shoes are such wonderful value that we will gladly send them to you at once, no money down. You will find them so well-made and so stylish and such a big money saving bargain that you will surely keep them. No need to pay higher prices when you can buy direct from us. Why pay \$5 and \$6 for shoes not near so good?

Great
Shoe
Offer



This shoe is built to meet the demand of an outdoor city workers' shoe as well as for the modern farmer. Built on stylish lace Blucher last. Special tanning process makes the leather proof against the acid in milk, manure, soil, gasoline, etc. They outwear three ordinary pairs of shoes. Very flexible, quick and easy on the feet. Made by a special process which leaves all the "life" in the leather and gives it a wonderful wear-resisting quality. Double leather soles and heels. Dirt and water-proof tongue. Heavy chrome leather tops. Just slip them on and see if they are not the most comfortable, easiest, most wonderful shoes you ever wore. **\$3.85** for shoes on arrival. If, after Pay only

careful examination you don't find them all you expect, send them back and we will return your money. Order by No. X15012.

SEND your name and address, and be sure to state size you want. You be the judge of quality, style and value. Keep them only if satisfactory in every way. Be sure to give size and width.

LEONARD-MORTON & CO., Dept 2051, Chicago

Books and Bulletins—Continued

where its culture is increasing rapidly. This increase is retarded, however, by the fact that the first cutting of alfalfa commonly conflicts with corn cultivation. About one-half of the alfalfa of the United States is grown under irrigation, and less than six per cent of the acreage in 1909 was east of the Missouri River. It is raised quite extensively in the Black Prairie of Alabama and Mississippi, however, where the annual rainfall is 50 inches, and is being grown in Saskatchewan upon a rainfall of less than 15 inches. Its deep roots enable it to endure drought much better than does clover. Including the various varieties, alfalfa grows under almost as great variations of temperature as any other cultivated plant, its range extending from the intense heat of the Imperial Valley of California to the cool climate of northern Montana and Saskatchewan. It thrives best, however, and produces the most cuttings per season in the warmer Southwestern States." A glance at the map shows that the San Joaquin, Sacramento, and Imperial Valleys of California, the Snake Valley of Idaho, the Salt Lake Valley of Utah, the Big Horn Basin of Wyoming, the region north of Denver, the western slope, and the Arkansas Valley of Colorado are all heavy producers of alfalfa, and these are the regions from which most of the alfalfa honey comes. The enormous region of alfalfa growing in Kansas and Nebraska has not as yet yielded much honey to the general market, but there is every reason to expect that beekeeping will be greatly increased in these States in the near future. Alfalfa does not secrete nectar to any extent east of the Missouri River, so the fact that it is not grown much in this region is not a matter for the beekeeper to lose sleep about. In the intermountain country of Colorado, Utah, Wyoming, and Idaho the honey from alfalfa is white, while that from Arizona, New Mexico, and the valleys of California is amber. Some day the beekeepers will appreciate the room for development of beekeeping in some of the alfalfa regions where the industry is as yet undeveloped, and then there will be more of this delicious honey on the market.

Beans.—Where these vegetables are grown extensively they furnish nectar for the bees, although all varieties are reported to be not equally good. The main bean regions are shown to be in California, Michigan, and New York. Recently there has been a great increase in bean growing in Colorado and other Western States.

Buckwheat.—The map presented herewith shows the buckwheat region. This plant is probably native to China, and in the United States two-thirds of the entire acreage is in New York and Pennsylvania. The plant is grown as far west as Minnesota, and is also found south in the mountain region. Very little buckwheat is grown where the mean summer temperature is over 70 degrees, and practically none where it exceeds 75 degrees. Buckwheat will give profitable yields on soils too poor to produce most other crops. It is grown largely on poor soil or as a catch crop after another crop has failed, since it may be sown as late as July 1 and still mature before frost in the northernmost States. Thruout the entire buckwheat region European foul brood is prevalent, resulting in a considerable reduction of the buckwheat-honey crop. The honey is the darkest that is put on the market, but those who have eaten it in their childhood days think that there is no honey as good. The flavor is strong.

Clover.—In the discussion of hay and forage there are some interesting facts brought out which have a great influence on the honey situation in the clover region. It is shown that the leading variety of hay is timothy and clover mixed in the States of New York, Pennsylvania, Michigan, Wisconsin,

(Continued on page 699.)

YOU WILL BE PROUD OF THIS COLLECTION

"Home Fruit Collection"

Is sold only with a 1 or 3-Year Subscription

1 Delicious Apple	1 Moore Early Grape
1 Early Elberta Peach	3 Mersereau Blackberry Plants
Amer. Fruit Grower, 3 yrs. \$1.00	Amer. Fruit Grower, 1 yr. \$.50
Home Fruit Collection .50	Home Fruit Collection .50
\$1.50	\$1.00

CAN YOU BEAT IT?

It really sounds like a fairy-tale, but, nevertheless, we will send this "Home Fruit Collection" to anyone subscribing to the American Fruit Grower for three years for \$1.50, or a one-year subscription including "Home Fruit Collection" for \$1.00. Just think how great it would be to have this fine selection growing in your yard. In a few years you would obtain enough fruit to meet your own wants and also have some to can for the winter.

Our Guarantee

We positively guarantee this collection to be in a hardy and healthy condition when received by you. They are packed in heavy cartons and sent to you by prepaid parcel post. Full instructions for planting and care sent with each collection.

One Delicious Apple

Is large, the surface almost covered with a most beautiful, brilliant dark red, blending to golden yellow at the blossom end. In quality it is unsurpassed, incomparable—words cannot describe it. In flavor it is sweet, slightly touched with acid, but only enough so to make it all the more pleasing, with an aroma delightfully fragrant. The flesh is fine-grained, crisp, juicy, melting and withal delicious. People with delicate digestion to whom an acid apple is wholly indigestible, can enjoy Delicious apples without disagreeable after-results.

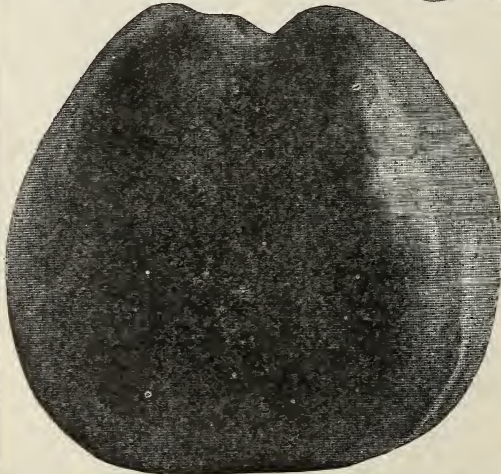


One Early Elberta Peach

Is the yellow peach of the century. The huge golden globes of fruit that it bears in such astonishing abundance are now famous wherever peaches are grown. The Early Elberta is a beautiful golden yellow, blending into a glorious red on the sunny side; a strong, protecting skin, covering a luscious flesh that is flavored with a juice as sweet as nectar. It allures with its beauty, gratifies with its quality.

One Moore Early Grape

Similar to Concord in appearance and quality; vine healthy and hardy, succeeding wherever Concord grows. One of the most profitable varieties, and is planted largely in all sections East, West, North and South.



Use This Coupon

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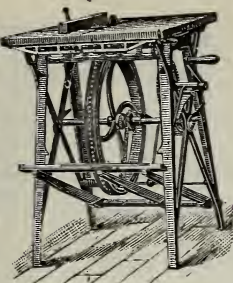
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Books and Bulletins Continued

Iowa, and western Missouri, the New England States, and the mountain region of the South to Tennessee; while in Ohio, Indiana, Illinois, and eastern Missouri the chief hay crop is timothy without the clover. It is well known that the last named States are much less valuable as clover-honey States than the States in the first named group. Clover is evidently influenced markedly by climate. It extends into central Tennessee, but there the climate is practically the same in summer as that of New York State. Clover is also found in Montana, Washington, and northern California, and there are some fine locations for clover honey along the Mississippi River. In the discussion in the atlas there is no mention of white clover alone, but we know that where clover grows, the white clover and alsike are found. On page 120 there is a map presenting to view the dairy industry as shown by the receipts from sales. This map might well serve as a map of the commercial beekeeping industry in the United States. Dairying in the West is, of course, dependent on alfalfa, but it, too, is great for beekeeping. If the beekeepers unite with specialist farmers of any other class, it ought to be with the dairymen.

Sugar.—The discussion of sugar in this atlas shows very clearly why there is a shortage of sugar among the allies. The United States produces 5 per cent of the world's sugar supply, Cuba 14 per cent, Porto Rico 2 per cent, and the Hawaiian Islands 3 per cent. On the other hand, Germany produces 13 per cent, Russia 9 per cent, Austria-Hungary 9 per cent, India 14 per cent, Java 8 per cent, all of which we can not get, either because it is on the other side of No Man's Land or because we cannot spare ships to get it. Northern France normally produces plenty of sugar, but this industry has suffered because of the unwelcome visitor. The United States, Canada, and the United Kingdom all use over 80 pounds of sugar per capita when it is available; France and the Central Empires use from 40 to 50 pounds per capita; while Russians and the people of India get on with about 20 pounds each. There would be plenty of sugar for all of us in the United States this year, were it not for the fact that we are sharing what we have with the European nations that are fighting with us. We need some to feed our lees, and we cannot well use anything else for them, but if need be we will send all the rest to Europe, if it will do any good in fighting the war. The total production of sugar for the entire world is given as 16,806,000 long tons, while the total population is less than two billions. That indicates that human beings use a great deal of sugar. It is significant that there are presented in this atlas no statistics for honey production. This, we may assume, is not from neglect, for there are no available figures for the honey production of the world. Since sugar production increased with the introduction of trade with the tropics, honey has had to take a back seat; but every new fact about the food value of honey that is brought out by investigations shows that we have made a serious mistake in decreasing our consumption of honey and in so greatly increasing the use of cane and beet sugar. Perhaps the war will teach us a lesson in this regard, if we cannot get all the sugar that we might wish. At any rate, the people of the United States will be far better off, if they will increase their use of honey—and it is the beekeeper's business to see that they do. The beekeepers of the United States will make a great increase in the food supply of the nation, if the season is favorable. They will do it because it will pay them to produce more honey, but there is a bigger reason back of it. The chief reason is that this is the best way that the beekeepers can help to win the war.

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Will ship Italian Bees this year from our own yards. They are hustlers. A few pounds of Honey next year at 25 to 30c per pound will pay for your packages of bees. We shipped thousands of pounds last season.

We are booking orders now, one-fourth down, balance at shipping time. We are going to winter 1000 Young Tested Queens reared in October so can ship tested Queens early as you want them.

One 1 pound package of bees.....\$2.90	Select Untested Queens.....\$1.50 each
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10 per cent discount on orders amounting to 25 packages or more. Add price of Queen wanted when ordering packages of bees. Breeders \$5.00 and \$10.00.

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PLACE YOUR ORDER NOW

for the goods wanted this winter. Exact prices quoted on the list of goods you want. Honey and beeswax taken in exchange for bee supplies.

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BEES Tested Italian Queens, \$1.50

We furnish full colonies of bees in single-walled and double-walled hives. Nucleus colonies and bees by the pound. Write for what you need.

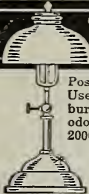
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Does It Pay?

The ad. I put in the September GLEANINGS calling for a few good colonies of bees brought me great results, saving me at least \$5.00 per colony.

Howard E. Harriman
Prospect, Me., Sept. 20, 1918.

AROUND THE OFFICE

M.-A.-O.

W. A. Gridley of Los Molinos, Calif., wrote this here on Sept. 18: "Gleanings satisfies me, but I wish you could shake more out of Mel Pritchard. Ain't he a lazy old cuss? I wish he enjoyed writing as much as I enjoy his articles." Then on Oct. 4, after Gridley has got his October Gleanings, he up and writes this: "Thanks to M.-A.-O. for Mr. Pritchard's photo, page 636, last Gleanings. It is the best thing M.-A.-O. has ever turned out. Mr. P. is a nice looker. Wish he would write more for us. He never wastes printers' ink, but always gives us facts that are proved. I have accused him of being a lazy old cuss. That was before seeing his picture. I think now it is due to lack of confidence. I will apologize to him when we meet." That's what Gridley wrote exactly, that cuss word cuss and all, just so. I have got my opinion of any one indulging in such language, so I have, and Dr. Miller says he has. I want the language reformers who saved me, to get right after peelin' Gridley and skin him alive, so I do, by Sulphide. But I have a little somethin' myself to say to Mr. Gridley. He says Mel Pritchard's photo is the best thing M.-A.-O. has ever turned out. Is Mel's picher the best thing I ever done? Well, then either Mel ought to be very proud of hisself or I oughter retire away in the rear sine di. And I want to know how Gridley by just lookin' at Mel's picher knows he ain't a lazy old cuss but is lackin' in self confidence? Is that so? Has Gridley ever saw Mel pick a skunk up by the tail, or seen him tie into Editor E. R. Root on some bee-keepin' question? I aint never seen any lack of confidence on such occasions as them, so I aint. Why, I see him a smokin' one day so near to Mr. A. I. Root that "Uncle Amos" was almost lost in the smoke screen

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Around the Office - Continued

Mel was a puttin down, and when Mr. A. I. up and says, "Why, Mel, do you smoke?" Mel says right back, "Not any more than just what I am doin now. Why don't you?" If that ain't what you call confidence, its somethin close resemblin to nerve. No, sir, Mr. Gridley, Mel aint a lackin in nerve. He'll tackle a skunk or the Root crowd any time. Your first guess was right. He's a lazy old cuss when it comes to writin:

* * *

The picher of our Editor published in this department this time was handed me by one of his nearest relatives. It wont his wife tho. He was in swimmin at the time. Anybody who aint seen him lately wouldnt a known he had grown so fat. He looks some-



Editor E. R. Root, from his latest photo.

thing like a hippotamous here. He was claimin to be floatin and showin how to do it when the camera caught him, but if I know anythin about floatin he aint doin it. He's perched on a sand bar and his head and feet are all that's floatin,—he's just curvin one over on his lady admirers linin the

New England Beekeepers

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Beekeepers: Let us print you some cloth or manilla tags to go on your shipments of wax with your name and address. That is the only safe way to be sure your wax isn't lost in transit.

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The A. I. Root Co., Medina, Ohio

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The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from

shore. But why did he stick his feet up so? Are they anythin to be proud of? And does a hat and glasses generally accompany a gent what is floatin sure? Iony Fowls says if I dare publish this picher I just better go home from the office for a few nights on some other street than where his wife lives on. I had thought of that too, and I am goin to do it.

* * *

Here's a feller I like and I'll bet he's honest. He's F. N. Westgate of Portage la Prairie, Man. He wrote one of the Roots the other day sayin': "I am troubled with shorts, as they say here. Money is the scarest thing you ever saw with me just now." That's me too all over. I'll bet Westgate's a fisherman and tends to it, too.

* * *

Mr. W. C. Young of Chicago writes the Roots about receivin one of their books and ends up by sayin: "I certainly enjoy it when nothing else can please me." Mr. Young, is your wife livin?

* * *

J. L. Byer now comes along in a letter to me personal sayin he invited me fishin oncet and that was a standin invitation and that was enough. It might a been enough for ordinary people runnin in ordinary luck. But I don't ever know how I am standin with people the next day. I aint generally steadily liked by nobody. I have to make

sure new every mornin that my own old coon houn, who I've fed lovinly for a dozen years, wont bite me that day. Why would I expect a invitation then to hold good till I could get to Canady? I couldn't. But why should Byer go on in his letter to me tellin what great fishin they've been havin up there this fall, and end up by sayin, "but the fishin's over for this year?" Is that the regulation endin of a standin invitation to come a fishin? Next year there won't be no dodgin me, Byer. You needn't write me next April or May that the fishin's over for next year, so you neednt. I'm comin, any way.

* * *

I see that in this here number of Gleanins, Dr. Miller says he see Mel Pritchard's picher in October Gleanins. If he did, he had to see it in among my own writins, and I don't see how so awful good a man as he is pollutes hisself that a way. He says he's got his opinyon of me—he said it just that a way, as was meaner'n so he had printed that opinyon in full right out. By the way, that old sage out at Marengo can say more, too, without sayin it at all than most ink spreaders can say in a whole colum. But without commentin more on him at this time, what I want to say is that if he goes snoopin around in this here Around the Office department he oughter take what he finds and not kiek about it, so he had. I sort o like Dr. Miller too despite what he said about me.

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THE best and safest way of protecting your bees from the cold, saving all their energy for honey-making, is by using "Hivofelt." After five years on the market, "Hivofelt" has thousands of satisfied users and is recommended by State Universities and the United States Department of Agriculture.

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Over there Over here

THROUGH mud and rain, through gas and shrapnel, our boys are pushing on to Victory. It's a task that tries the souls of strong men. They *must* have rest and recreation.

At the canteens, they buy the little comforts of life at cost. In the war-service huts, they find everything needful to write the letters you receive. They attend a show, see a "movie" or hear good music—all free. Always, they find in the hut secretary a friend. They forget for a little while the grim scenes of war and return to duty refreshed. These are some of the things that keep fighting men at top notch.

YOURS is the task of growing the food these fighting men must have. The toiling millions in the munition factories, arsenals and shipyards also look to you for sustenance. And they do not look in vain.

Your work is vital to winning the war and you are doing it manfully, mindful of Country, forgetful of self. You are working early and late, putting forth your strength unsparingly. You have produced bounteous crops that feed a hungry world. Yet to you are spared the comforts of home and the presence of loved ones. Yours are the privileges of earning and giving.

Give to "keep good men good and brave men strong."
Give to bring cheer to those who are daring their all for you and yours. And when the boys come home victorious, you can honestly say, "I have done my part, too. I have backed you to the limit."

Seven Allied Activities, all endorsed by the Government, are combined in the United War Work Campaign, with the budgets distributed as follows: Y. M. C. A., \$100,000,000; Y. W. C. A., \$15,000,000; National Catholic War Council (including work of the Knights of Columbus and special war activities for women), \$30,000,000; Jewish Welfare Board, \$3,500,000; American Library Association, \$3,500,000; War Camp Community Service, \$15,000,000; Salvation Army, \$3,500,000.

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